



MEMORANDUM

Date **2015-07-03**

The driving forces behind household indebtedness in Sweden

At the meeting of the Financial Stability Council on 11 November 2014 there was joint concern – albeit to somewhat differing degrees – over the high and rising level of indebtedness in the household sector. The Council therefore agreed that it was necessary to further analyse the driving forces behind household indebtedness and the risks linked to them. Sveriges Riksbank (The Riksbank), Finansinspektionen (the Swedish financial supervisory authority) and Riksgälden (Swedish National Debt Office) have therefore produced this joint report to provide an overall picture of the driving forces behind the upturn in household indebtedness. However, the report is not a complete analysis of household finances, as it does not take into account household assets, for instance.

The report begins with a summary of how household debt has increased since the end of the 1990s and what driving forces lie behind this upturn. This is followed by an in-depth analysis of how demand for housing, demand for credit, the supply of housing, the Swedish housing market and finally the banks' credit supply have affected households' willingness and possibilities to buy housing and take on debt in the past 15 years. One central conclusion of this report is that indebtedness is linked to a large degree to developments on the housing market. There are several interacting factors that are causing both indebtedness and housing prices to rise. Both macroeconomic and structural factors have pushed up demand for housing and mortgages, at the same time as the Swedish banks have been able to meet the demand for such loans efficiently. Moreover, the supply of housing has not fully corresponded to the rising demand, which has caused housing prices to rise.

At the meeting of the Financial Stability Council on 15 June 2015, the members of the Council were agreed that the high level of household indebtedness and rising housing prices comprised risks. Sveriges Riksbank, Finansinspektionen and Riksgälden therefore consider it necessary to analyse both the risks linked to high household indebtedness and possible measures to deal with it.

1 Summary – indebtedness has increased for several reasons

Swedish household debt increased by an average of almost 10 per cent a year during the period 2000-2010. Since 2010 the rate of increase has been slower, but over the past two years lending to households has picked up and the aggregate debt-to-income ratio has increased again in recent quarters. Housing prices have also risen at an increasingly rapid pace.

Macroeconomic factors have contributed to rising household indebtedness

When a household buys a home, most of the purchase price is usually funded through a mortgage from the bank. For most households, therefore, their home is often their largest asset, and their mortgage is their largest debt. Price developments on the housing market are thus very important for the development of household debt.

The size of the demand for housing and mortgages is therefore mainly dependent on households' incomes and wealth and on how high mortgage rates are and can be expected to become. Households' expectations of future incomes are also of importance for demand.

In recent decades, households' disposable incomes have increased substantially. At the same time, real interest rates have fallen from 6 to 1 per cent between 1995 and 2015. Both factors are key macroeconomic driving forces behind the rising house prices and the higher debt level. The downturn in real interest rates is an international phenomenon linked to both structural factors and a high level of global saving in relation to the demand for investment and weak global economic activity. The future development of the real interest rate is a central factor for housing prices and indebtedness and the potential risks linked to household indebtedness.

Structural factors have also contributed to the increase in household debt

Several structural factors have contributed to the increase in household indebtedness. More households now own their own homes rather than rent them, which pushes up households' total indebtedness. Our calculations imply that this can explain approximately one quarter of households' rising indebtedness in Sweden.

The increase in demand for housing has contributed to higher housing prices and thus higher indebtedness. Demand for housing has increased rapidly in Sweden, partly as a result of a rapid growth in the population over the past decade, due to a large immigration surplus. Unlike a birth surplus, an immigration surplus affects demand for housing in the near term.

Rapid urbanisation in Sweden has also contributed to an increase in the demand for housing in metropolitan areas and other growth regions. The strong demand is therefore most noticeable in metropolitan areas and growth regions. Other demographic aspects that have contributed to a strong demand for housing are that many households are of family-starting age, that more

households consist of only one person and that average life expectancy has increased.

Demand for housing and households' willingness to take on large mortgages are also affected by the design of the tax system. With regard to mortgages, taxes can have a direct effect in the form of interest deductions and an indirect effect through housing-related taxes. The interest deduction has remained unchanged over a long period of time, but property tax has been cut, wealth tax and inheritance tax have been abolished, while tax deductions for home repairs, maintenance and improvement (ROT scheme) have been extended. This has probably contributed to the rise in housing prices and increase in debt.

These structural changes can thus partly explain why the debt-to-income ratio, that is, households' total debts as a share of disposable income, has increased. If these structural factors remain unchanged, then the debt-to-income ratio can be expected to remain high.

Housing supply has not succeeded in satisfying the increased demand

Since the 1990s crisis, housing construction in Sweden has been low compared with the decades preceding the crisis. Several factors appear to have held back construction in recent years, such as high land prices, legislation and regulation on the rental market, weak incentives for property owners and construction companies and limited access to land for building in attractive areas. The production of new housing is a lengthy process, particularly with regard to apartment blocks in central locations in major cities. This means that a slow adjustment in the supply of housing to the rapidly-increasing demand may have contributed to higher housing prices. However, the effect of a weak supply of housing on indebtedness is not clear, as indebtedness depends on both housing prices and the number of mortgaged properties.

Although there is evidence that housing construction in Sweden is responding relatively well to changes in housing prices, it is important to note that new construction of housing in Sweden is expensive and that it is therefore mainly aimed at households with good spending power who are demanding tenant-owned housing and single-family houses. In order to reduce frictions in the housing market, it is therefore important to improve the matching of housing demand and supply and enhance mobility in the housing market so that housing construction can also benefit households with less spending power and those who wish to live in rented accommodation.

The strong demand for housing in Sweden has to a large extent been channelled into tenant-owned housing and single-family houses. Rented accommodation is generally difficult to access in the short term, as there are long waiting-lists in several municipalities. This is probably a consequence of the regulations governing the rental market. The difficulty in getting hold of rented apartments is reinforced by many of them being converted into tenant-owned apartments, and by housing construction largely being focused on new

tenant-owned housing and single-family houses. Converting a property from rented to tenant-owned housing does not, however, lead to more homes.

The Swedish banking system has been able to supply large numbers of mortgages

One explanation why Swedish households' indebtedness has increased substantially since the early 2000s is that the Swedish banks have been able to meet the household sector's increasing demand for mortgages. The banks have been able to expand their lending rapidly, as they have had good access to market funding at low interest rates, at the same time as the capital requirements for mortgages fell prior to the financial crisis. However, since 2010 the capital requirements for mortgages have been raised, mainly as a result of the risk weight floors for mortgages. Moreover, lending may have been subdued by the weak economic activity in Sweden and Europe.

2 Demand for housing

This section describes how central macroeconomic and structural factors have developed in recent decades, and how they may have affected demand and prices for housing. The macroeconomic factors can be divided up into two parts: 1) costs for housing and 2) household incomes and wealth. Structural factors refer to demographic factors, such as population growth, age distribution and urbanisation patterns.

2.1 Macroeconomic factors

Lower interest rates and taxes have helped reduce households' housing expenditure

Housing prices are a central driving force behind household indebtedness. Demand for housing has long been increasing in Sweden, and parallel with this prices have also risen.

Several studies show that the demand for housing can be largely explained by the so-called user cost.¹ This approach assumes that with an efficient rental market, there will be a clear link between the cost of renting and the cost of owning a home.² For a person who owns his/her home, this cost consists mainly of real mortgage interest payments after deduction, housing-related taxes and operating and maintenance costs minus expected capital gain (increases in the value of the home).^{3,4} If the user costs decline, the household can afford to buy more expensive housing. This increases demand and pushes up prices.

Englund et al. (2015) observe that the most influential factor affecting the user cost is the real interest rate after tax. Since the mid-1990s, the real interest rate on mortgages in Sweden has fallen from 6 to 1 per cent (see Chart 2:1 and the box "Why has the real interest rate fallen?"), which has halved the user cost. Sørensen (2013) shows that the decline in the real interest rate has been so great that if the other components in the user cost are held constant, the user

¹ See, for instance, Poterba (1984), Englund (2011), Alsterlind et al. (2014) and Englund et al. (2015).

² Although this is not valid in Sweden, Englund et al. consider (2015) that the analysis is nevertheless informative, as long as the difference between market rents and regulated rents does not change significantly. However, the study indicates that the difference has increased in recent years.

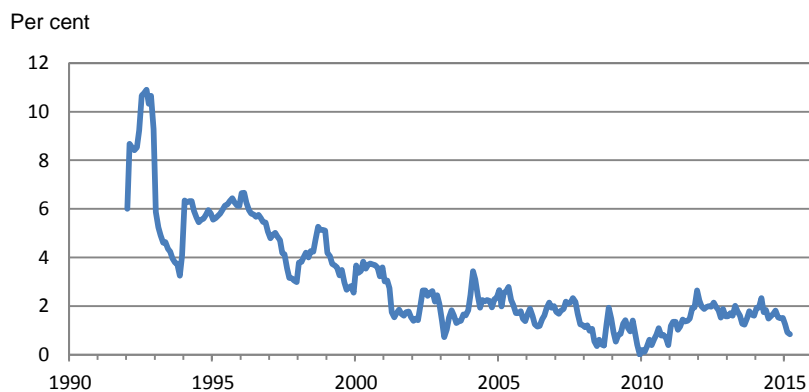
³ There are different ways of calculating the user cost, which is not directly observable. Davis et al. (2011) say, however, that there are at least seven factors that should be included in an estimate: (i) mortgage rates (ii) depreciation (iii) maintenance and repairs (iv) property taxes (v) capital gains (vi) risk premiums and (vii) the possibilities for tax deductions. Wigren and Fälting (2002) also give a more detailed description of which components can be included in the user cost.

⁴ Note that the *loan cost* comes from the real interest rate after tax multiplied by the price of the home (when fully mortgaged).

cost has not increased at all for households since the 1990s, despite housing prices having risen and households having more debt. The downturn in the real interest rate is thus one of the most important explanations for the increase in housing prices in recent decades.⁵

Other factors have also affected the size of the user cost. For instance, as discussed in Section 3, the changes in property tax and the introduction of tax deductions for home repairs, maintenance and improvement have contributed to a lower user cost for some households.

Chart 2.1. Real mortgage rate in Sweden



Note. Refers to a weighted mortgage rate minus the actual annual change in the CPIF, that is, the CPI with a fixed interest rate.

Source: Sveriges Riksbank

Expected capital gains are also included as a component of the user cost, which means that households' expectations of future housing prices affect the demand for housing. Demand consequently increases when households expect housing prices to rise.⁶ Chart 2.2 shows that households' expectations of future price developments have largely correlated with price developments on the housing market, which indicates that expectations have contributed to a lower user cost for households.⁷ As shown in Chart 2.3, the average housing cost for both owner-occupied and tenant-owned housing has fallen since 2004.

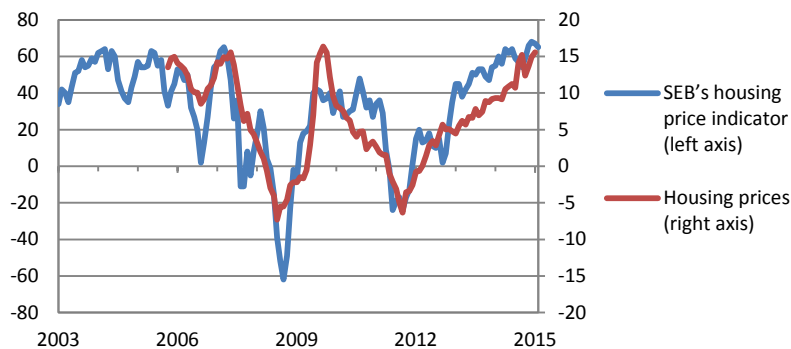
⁵ See also Claussen et al. 2011

⁶ Studies from the United States and Denmark have shown that households' expectations regarding future prices may be self-fulfilling and thus contribute to further price increases. See, for instance, Case and Shiller (2003), Danmarks Nationalbank (2011) and Case et al. (2012).

⁷ Boverket (2013a) also says that expectations have had considerable significance for the rise in prices on the Swedish housing market in recent decades.

Chart 2.2 Households' expectations and housing price trends in Sweden

Net figures and annual percentage change

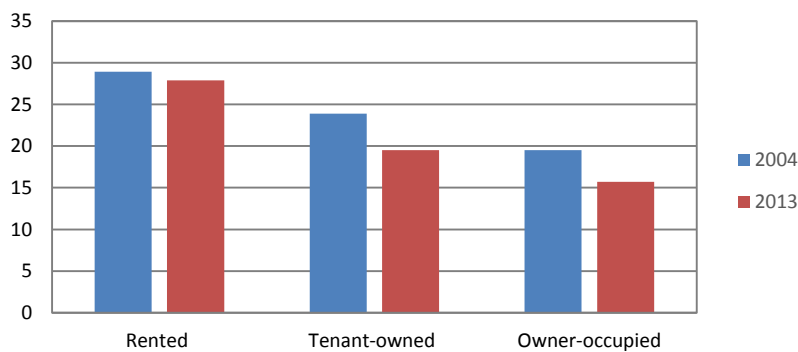


Note. Net figures are defined as the difference between the percentage of households who believe that housing prices will rise and the percentage who believe housing prices will fall.

Sources: SEB and Valueguard

Chart 2.3 Average housing expenditure per household for different forms of occupancy

Percentage of disposable income, median



Note. The higher housing expenditure for households in rented accommodation is mainly due to these households having a lower disposable income, on average.

Source: SCB (Statistics Sweden)

Why has the real interest rate fallen?

Falling real interest rates are a central macroeconomic driving force behind falling user costs, rising house prices and increasing indebtedness among households since the mid-1990s. But the question is, why have these rates fallen?

Real interest rates have shown a falling trend in many countries over the last 20–25 years. This is partly due to increased saving in emerging economies (for instance, China) following the Asian crisis in 1997, demographic factors (older population with greater propensity to save) and increased income inequality (a larger share of incomes went to the richest share of the population, which have a higher propensity to save)⁸. At the same time, real

⁸ See for example IMF (2014).

interest rates in various countries have become increasingly correlated, resulting in fewer deviations from "global" real interest rates. The falling real interest rates, combined with the central bank inflation targets, have pushed down policy rates in most developed countries.

The decline in real interest rates in recent years has also been largely due to cyclical factors. The financial crisis and the ensuing slow recovery led to many central bank policy rates being gradually cut and now lying close to or even below zero. It is thus a combination of cyclically weak demand and structurally high saving that lies behind the current low real interest rates.⁹

Household incomes and wealth affect demand for housing

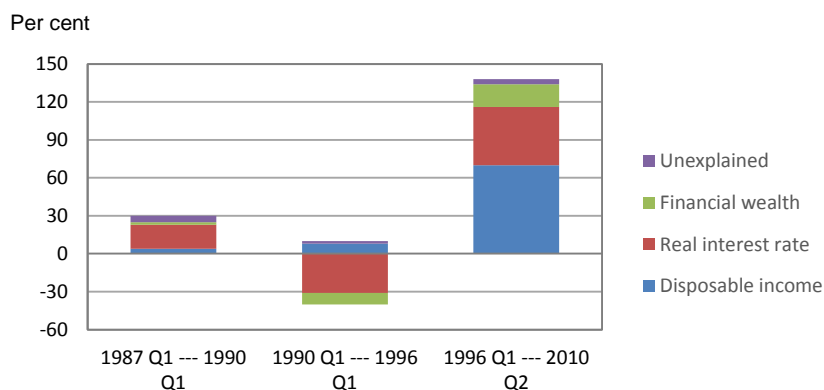
Another driving force behind the increased demand for housing is household income and wealth. The richer a household is, the greater is their purchasing power and the more expensive housing they can afford.

Claussen et al. (2011) show that while households' real disposable incomes were not an important explanatory factor for Swedish housing prices at an aggregate level during the period 1986-1996, they were a very important explanatory factor behind the ensuing upturn in prices. Between 1996 and 2010 households' real disposable incomes increased by on average 2.3 per cent a year, which was much more than before.

Similarly, households' financial wealth was not an important explanatory factor behind developments in housing prices up to 1996, but all the more important thereafter (see Chart 2.4). From the mid-1990s, stock markets rose in general, leading to greater household wealth. But households' financial wealth nevertheless affected housing prices less during this period than the real interest rate and households' disposable incomes did.

⁹ See also IMF(2014), Sveriges Riksbank (2014b) and Armelius et al. (2014).

Chart 2.4 Explanations for the development in real housing prices during three time periods



Note. Real housing prices are nominal property price indices deflated using the CPIF.

Source: Claussen et al. (2011)

Increased incomes are an important explanation for the rise in housing prices in Sweden. As shown in Chart 2.5, the correlation between income level and the level of housing prices is strong in Sweden's municipalities. In Danderyd municipality in greater Stockholm, where a person has an average income of around SEK 492,000, a single-family house cost on average around SEK 8.8 million in 2013. In Årjäng municipality in Värmland, where a person has an average income of around SEK 200,000, a single-family house cost on average around SEK 790,000 in 2013. The differences in income levels between different municipalities are thus one explanation why housing prices vary between different parts of the country, although the results should not be interpreted as evidence of a causal link between these factors.

Chart 2.5 Correlation between single-family house prices and average income for residents in Sweden's municipalities in 2013

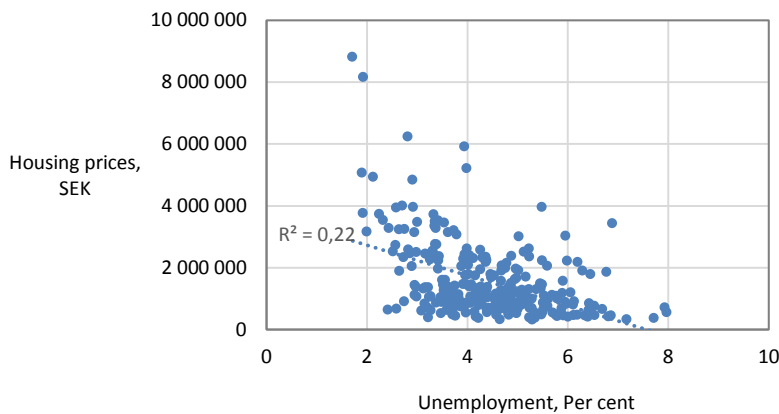


Note. Each point shows the nominal price of single-family houses and the average income of residents in Sweden's municipalities in 2013. The price of single-family houses is calculated at the average price in each municipality. The incomes are the combined earned incomes per municipality at 2013 prices.

Sources: SCB (Statistics Sweden) and Sveriges Riksbank

Household incomes are to a large degree influenced by the situation on the labour market. If the labour market is strong, more households will have wage income and thereby a stronger purchasing power. As shown in Chart 2.6, there is a negative correlation between unemployment and the level of housing prices in Sweden's municipalities. If there is a high level of unemployment in the municipality, housing prices also tend to be lower. However, one should also be cautious of interpreting this as a causal link between these factors.

Chart 2.6 Correlations between single-family house prices in 2013 and average unemployment during 1996-2013 in Sweden's municipalities



Note. Each point shows nominal single-family house prices in 2013 and average unemployment during 1996-2013 in Sweden's municipalities. The price of single-family houses is calculated at the average price in each municipality. Unemployment is defined as open unemployment as a share of the population aged 16-64 years.

Sources: SCB (Statistics Sweden), Arbetsförmedlingen (Swedish Public Employment Service) and Sveriges Riksbank

2.2 Demographic factors

The population has grown and urbanisation has increased

If the population increases, more people compete for housing. Moreover, it takes time to build new homes to match the demand. A rapidly growing population can therefore make housing prices rise. Englund (2011) claims that the rapid population growth in Sweden has led to an increased demand for housing over the past decades. However, research does not give any clear answer as to how developments in the population affect housing prices in the country as a whole.¹⁰ One explanation for this can be that developments in the population are largely heterogeneous and also vary in different parts of the country.¹¹ Sörensen (2013) claims that it is mainly the substantial urbanisation

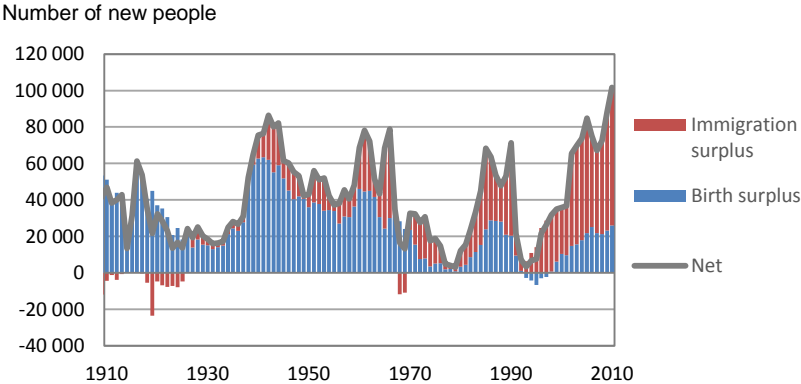
¹⁰ Claussen et al. (2011) find, for example, no support for the theory that demographic factors have affected developments in single-family house prices in Sweden as a whole since 1986.

¹¹ Cvijanovic et al. (2010) show that an increased population only has an effect on housing prices if the increase cannot be predicted, for instance, through rapid immigration or urbanisation. An increase in population that is due to a large birth surplus can be compensated

in Sweden that has caused the demand for housing to increase in metropolitan areas and other growth regions.

To illustrate how the development of the population in Sweden affects demand for housing, it is possible to divide up the aggregate population statistics on the basis of whether the population has increased as a result of births or immigration. The different types of population increase namely affect the demand for housing in different ways. An increase in immigration entails a greater need for housing in the near term, while a birth surplus makes greater demands in the longer run. Over the past decades, the Swedish population has largely increased through immigration. This means that the demand for housing has increased in the near term (see Chart 2.7).

Chart 2.7. Population developments in Sweden



Note. Birth surplus is defined as the difference between the number of people being born and the number of people dying. Immigration surplus is defined as the difference between the number of people immigrating and the number of people emigrating.

Source: SCB (Statistics Sweden)

Over the past decade, the immigration surplus has largely consisted of people from war-torn countries, who often have weaker financial conditions.¹² These people often do not have the possibility to compete for tenant-owned housing and single-family houses, which means they only have a minor effect on the price of this form of ownership. On the other hand, they can influence demand indirectly by increasing demand for cheap rented accommodation, which leads to greater competition for this. In a situation where there is a small supply of rented accommodation (see also Section 5), households who actually want to

for by an increased supply of housing in the future, which thus counteracts the effect of the increase in population.

¹² Disregarding Swedish citizens returning home, immigration in recent decades has largely consisted of people from war-torn countries such as Iraq, Syria, Somalia and Afghanistan (see SCB (2014)).

rent may be forced to buy a home instead. This increases the demand for single-family houses and tenant-owned housing and pushes up prices.¹³

More households of family-starting age and changes in households' living patterns

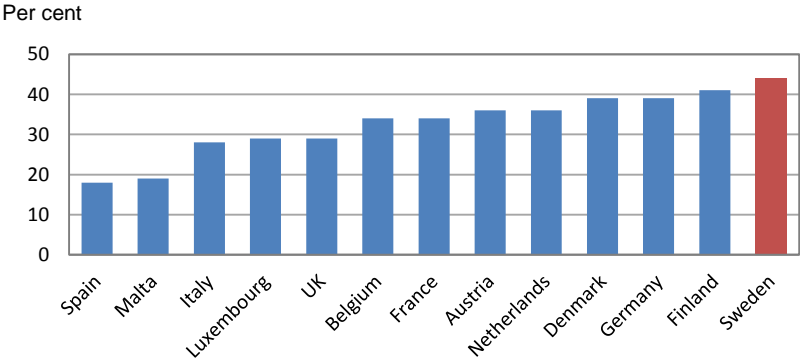
A further demographical factor that can affect the demand for housing is age structure. The demand for housing rises, for instance, if the number of households of family-starting age increases. Lind (2003) and Englund (2011) claim that households tend to follow a housing career in which they often move from smaller to larger homes up to age of 40 or so and then later move to smaller homes.

There are also a number of changes in households' living patterns that affect the demand for housing. One example is that the percentage of single-person households has increased substantially in Sweden over the past decades, rising from 33 to 44 per cent between 1981 and 2008. Even if one can see similar trends in several other countries, the percentage of single-person households in Sweden is on a very high level in an international comparison (see Chart 2.8).

Moreover, Swedes are living longer, which means that younger people are not able to take over older people's homes to the same extent as before. Average life expectancy in Sweden has increased from around 75 years in 1980 to around 82 years at the end of 2014. Older households also receive home help to a greater extent since the 2000s instead of moving to special accommodations.¹⁴

These factors interplay and contribute to both reducing the supply and increasing the demand for housing.

Chart 2.8 Percentage of single-person households in different countries, 2008



Source: Kees and Haffner (2010)

¹³ Sinai and Souleles (2005) as well as Finocchiaro et al. (2011) find that if the alternative of renting instead of buying a home is limited, households will be forced to buy, even if they do not expect to live there very long. The design of regulations on the rental market and a low supply of rented accommodation can thus push up housing prices.

¹⁴ See Larsson (2006) and Socialstyrelsen (National Board of Health and Welfare) (2006).

3 Demand for credit

This section contains an analysis of factors that affect the willingness and capacity of households to borrow in connection with purchasing a home. High demand for housing often leads to high demand for mortgages. However, there are further factors that can increase the demand for credit, in addition to the greater demand for housing. Such factors can include rapid urbanisation and relatively more expensive housing in metropolitan areas, length of studies in higher education and late entry into the labour market. Moreover, there can be tax regulations that benefit loan funding or investment in housing. A shift towards home-owning instead of renting also increases the demand for credit. All in all, an increased share of homeownership, lower interest rates resulting in higher housing prices, higher incomes and lower taxes on homes are assessed to have contributed to the demand for credit and thereby the upturn in household indebtedness.

3.1 Many factors behind households' demand for credit

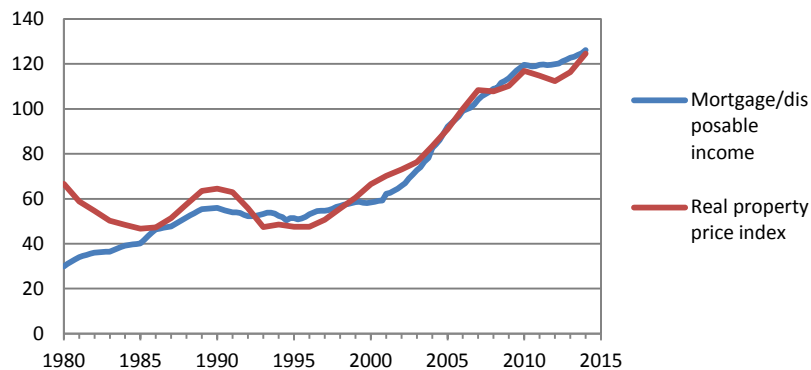
Households need mortgages to finance their housing purchases. The size of the mortgage needed by a household is affected by several factors, such as the household's income, the price of the home and how much it costs to own it. The latter includes, for instance, the cost of the mortgage. The number of households wanting mortgages is affected by the situation on the housing market. The supply and price of different housing affect, for instance, how many households want to borrow to buy a home. This makes it possible to describe aggregate indebtedness by multiplying the number of indebted households with the size of an average mortgage. Alternatively, one can multiply the number of indebted households with an average housing price and then multiply it with the average loan-to-value ratio. To explain the development in households' aggregate indebtedness, it is therefore appropriate to look more closely at factors such as the development of the population and homeownership, as well as developments in prices and loan-to-value ratios.

Higher housing prices have affected demand for mortgages

The increased demand for mortgages should be seen in the light of prices having risen substantially on the Swedish housing market. In many cases, higher housing prices mean that a household needs to borrow more. As housing is sold, the higher prices will give a higher aggregate indebtedness (see Chart 3.1).

Chart 3.1 Correlation between debts and housing prices

Per cent of disposable income and index 2006 = 100



Sources: SCB (Statistics Sweden) and Sveriges Riksbank

Correspondingly, there are mechanisms that reduce household indebtedness when housing prices fall. Households that enter the housing market do not need to borrow as much if prices fall. Existing homeowners do not have the possibility to mortgage their homes to buy capital goods to the same extent as when housing prices are rising. Personal bankruptcies and credit crunches by the banks are other factors that can subdue the development of debts. However, a reduction in demand on the housing market leads to a faster downturn in prices than in household indebtedness as existing homeowners still have their loans. Moreover, falling housing prices can go hand in hand with falling incomes. This means that indebtedness may nevertheless rise during these periods, if it is measured in relation to households' disposable incomes.

Apart from a general upturn in housing prices, there are some specific factors in the supply of housing that may have affected prices. For example, newly built housing is generally more expensive than existing housing, partly because these homes are often larger. The location of the housing also affects the development of debts, for instance, newly-built housing is normally more expensive in metropolitan areas. Rapid urbanisation and the rising percentage of tenant-owned housing has therefore probably contributed to the development of debt in Sweden. Prices of tenant-owned housing have also increased more than prices of single-family houses, even though more tenant-owned housing has been built in recent decades.¹⁵ This has pushed up the demand for mortgages with tenant-owned housing as collateral. Those with tenant-owned housing have on average a higher loan-to-value ratio than owners of single-family houses.

The fact that housing prices have risen has meant that many of those who already own their homes have been able to extend their mortgages. The household then takes out a loan with the home it already owns as collateral. Expressed in a different way, this means that the household takes equity from

¹⁵ However, the percentage of single-family houses in the housing stock is still much higher than the percentage of tenant-owned housing (see Section 5).

the home by increasing its mortgage. The additional capital the household borrows can be used to finance consumption that is not related to the home, or to invest in financial assets instead of being used to improve the home. There are signs that this behaviour is more common when housing prices are rising rapidly. It is therefore sometimes stated as a partial explanation for household indebtedness increasing during these periods. According to Boverket (the National Board of Housing, Building and Planning) (2012d), withdrawals of equity from housing were relatively large during 2001-2010.

Households' incomes come later in life

Since 2000, households' incomes have increased by on average 4.1 per cent a year. A higher disposable income generally means that households can afford to borrow more. Households' incomes and mortgages generally follow one another, so that one goes up when the other one does.

Apart from households' incomes having increased generally since the turn of the millennium, it is also possible to note that households obtain their incomes later in life as a result of longer time spent in education and entering the labour market later. At the beginning of the 1990s, the age of establishment on the labour market, i.e. the age at which 75 per cent of a cohort are in employment, was 21. Since then, the age of establishment has risen somewhat. In the mid-2000s, it was around 27 years. Late entry into the labour market increases the need of an individual to redistribute his or her income throughout life. However, as the increase in the age of establishment largely took place in the 1990s it is unclear to what extent it may contribute to explaining the upturn in the debt-to-income ratio during the 2000s, even if changes in the timing of starting a family or purchasing a home may have taken place during this period.

Households' loan-to-value ratios have increased

Both rising house prices and later work incomes may have contributed to the increase in households' average loan-to-value ratios for new loans from around 60 to 70 per cent during the 2000s. When housing prices rise faster than households' disposable incomes, it becomes more difficult for households to raise a deposit to buy a home. Similarly, their capacity to save declines when they spend longer time in education and enter the labour market later. Both of these factors can lead to homeowners being forced to take on larger loans, and thereby help to explain why households' aggregate indebtedness has increased. If the higher loan-to-value ratios are due to housing prices rising faster than households' disposable incomes, mortgages will increase even more in relation to incomes. But the households' scope to choose what size of loan they want is of course also dependent on the banks' credit-granting practices (see Section 6).

3.2 The cost of mortgages has declined

Lower mortgage rates have led to lower loan costs

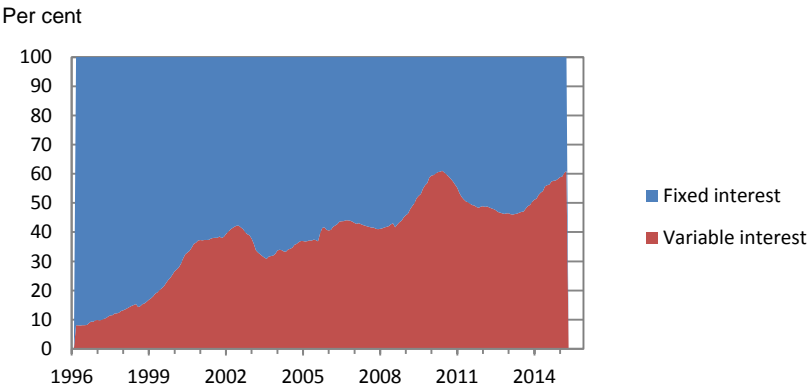
Throughout almost the entire period since the mid-1990s, the mortgage interest rates have fallen. In 1996, the average mortgage rate was approximately 10 per

cent and, by the start of 2015, it had fallen to about 2 per cent. For a household with a mortgage of SEK 1 million, this is equivalent to a reduction of interest expenditure before interest deductions of SEK 80,000 per year, or SEK 6,700 per month. This development in interest rates has resulted in a fall in households' interest expenditure as a percentage of their disposable incomes, despite the fact that their debts as a percentage of their disposable incomes have increased.

Larger percentage of loans at variable interest rates has reduced households' loan costs

In recent decades, households have chosen a larger percentage of loans at variable interest rates. At the beginning of 1997, the share of mortgages at variable interest rates was 10 per cent, but at the end of 2014, this share had increased to 60 per cent (see Chart 3.2).

Chart 3.2. The mortgage institutions' lending broken down by interest-rate fixation period

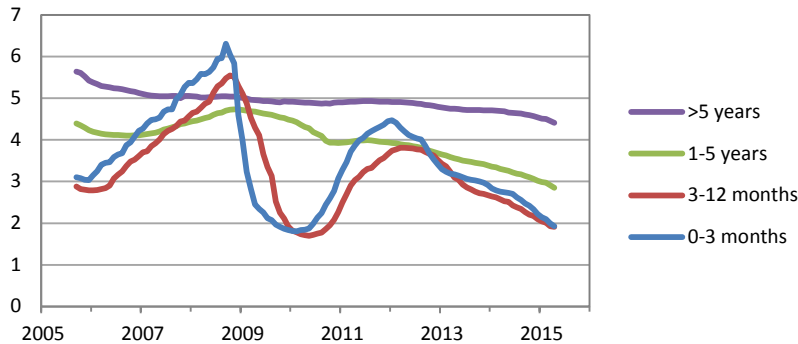


Note. Refers to outstanding amount.
 Source: SCB (Statistics Sweden)

Households' choice of interest-rate fixation period also affects the cost of their mortgage. In general, a shorter interest-rate fixation period entails a lower loan cost (see Chart 3.3). This could be an explanation as to why households increasingly have chosen to finance their housing with loans at variable rates. Moreover, during the period concerned it was relatively unfavourable for households to redeem loans at fixed interest rates early. Households were then forced to pay compensation for the interest difference if the bank had borrowed money at a higher interest rate. The current regulations on interest difference compensation have reduced the level of the compensation banks can demand.

Chart 3.3 Mortgage rates on existing agreements

Per cent



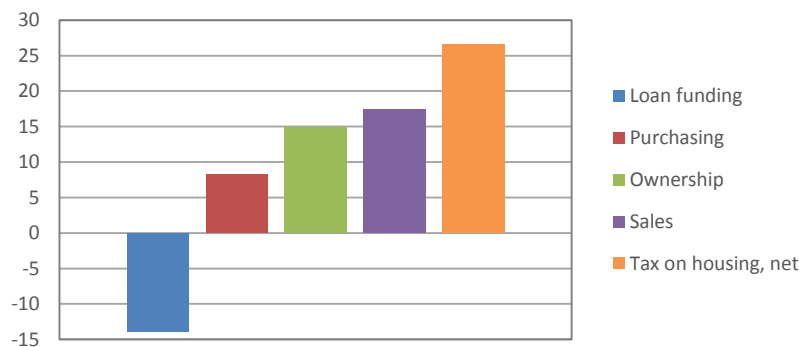
Source: SCB (Statistics Sweden)

3.3 Tax regulations make it cheaper for households to borrow

The demand for mortgages is also affected by the way the tax system is designed. Taxes can affect the housing cost both directly in the form of tax deductions for interest on loans (interest deduction), and indirectly if they are related to home services. Taxes are in total expected to affect household indebtedness and it is therefore appropriate to begin by analysing all taxes linked to households' mortgages and homes. Taxes can be divided up into interest deduction (reduced tax when funding a loan) and taxes when purchasing, owning and selling a home (see Chart 3.4). Households' total net cost for these taxes amounted to SEK 27 billion for 2014.

Chart 3.4 Taxes related to households' mortgages and housing 2014

SEK billion



Note. The tax deductions for home repairs, maintenance and improvement (ROT) have not been included in the calculations.

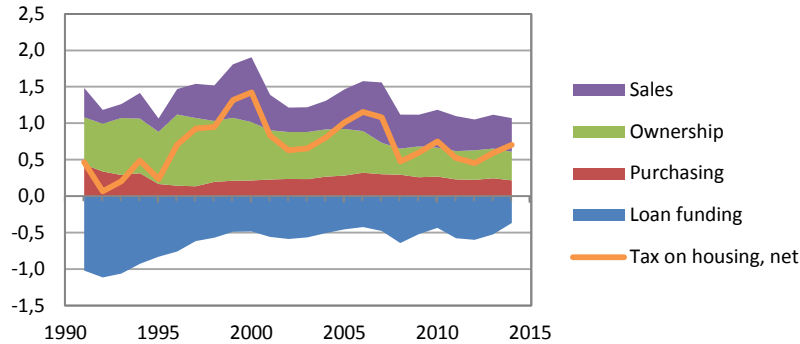
Sources: SCB (Statistics Sweden) and Finansinspektionen

In relation to GDP, taxes on ownership have fallen simultaneously as taxes on selling have risen (see Chart 3.5). The reasons are a combination of changes to tax regulations and rapidly rising housing prices. One consequence of high taxes when selling is that it becomes more expensive to move, which can contribute to lock-in effects and lead to poorer mobility on the housing market.

Poorer mobility on the housing market can in turn lead to poorer utilisation of the existing housing stock (see Section 5).

Chart 3.5 Development of taxes related to households' housing

Per cent of GDP



Note. The tax deductions for home repairs, maintenance and improvement (ROT) are not included in the calculations.

Sources: SCB (Statistics Sweden) and Finansinspektionen

The interest deduction reduces households' interest expenditure but does not explain why debt is increasing

The interest deduction can contribute to households taking on more debt. Interest expenditure for mortgages may be deducted from the base for capital income tax. As a large majority of households with mortgages have small or no capital incomes, the interest expenditure entails a tax reduction. Those with a so-called capital deficit obtains a tax deduction of 30 per cent of the deficit as long as this does not exceed SEK 100,000. For the part of the deficit that exceeds SEK 100,000, one instead receives a tax deduction of 21 per cent. In practice, this often means that the interest cost after tax is around 70 per cent of the original interest cost.

However, the size of the interest deduction has changed over the years. During the 1970s and 1980s, the deduction could in practice be equal to the marginal tax rate, and was on average around 55 per cent. This meant that the interest cost was more than halved. However, since the 1991 tax reform, the interest deduction has in principle remained unchanged at 30 per cent. It is therefore difficult to see this as an explanation for the increase in household debt from the mid-1990s and onwards, even if the level of debt during the whole period may have been affected as a result of stronger incentives to borrow.

A change in property tax has reduced housing costs

During the period in question, property tax has declined. This could well have caused the demand for mortgages to rise, as it has probably increased the demand for housing. Englund et al. (2015) say, for instance, that a lower property tax may partly explain the rapid growth in housing prices in Sweden in recent decades. The property tax has been reduced, by, for instance, adjusting the tax rate and by introducing regulations to abate and to limit it. Finally, the property tax was abolished in 2008, in exchange for a municipal

property fee with a ceiling of SEK 6,000 for single-family houses and a ceiling of SEK 1,200 for each apartment in an apartment block. For the majority of homeowners, this meant a reduction in housing costs. The maximum fee is index-linked and follows the annual change in the income base amount compared with 2008. However, the homeowners' costs are still much lower than before. The changeover to a municipal property tax has for some households meant that the costs of their housing have declined and that they have more money left over. Moreover, there is empirical evidence that the changeover has had some price effect on the most expensive homes.¹⁶

3.4 More people own their own homes

Owning a home is in general linked to having a mortgage, as homes are expensive to buy in relation to a household's annual income and they have a long lifetime. Everyone needs to have somewhere to live and as it has gradually become more common to own one's own home, an increasing number of individuals now have a mortgage. This has contributed to increasing households' aggregate debt-to-income ratio. When fewer people live in rented accommodation and more in tenant-owned housing, the debt can be said to have moved from rental property companies to private persons.

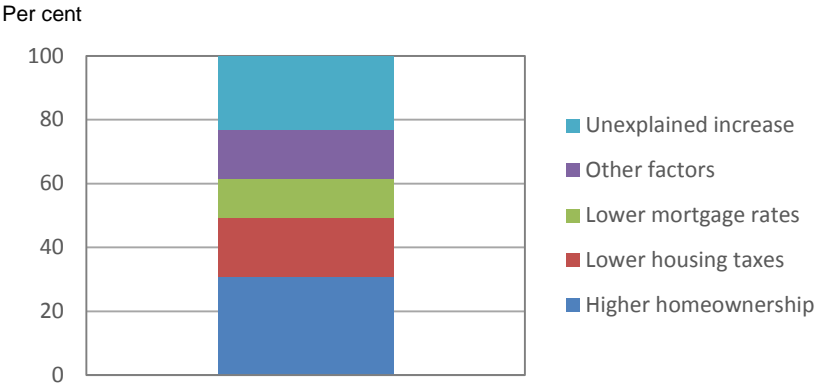
The proportion of households in Sweden who own their own home increased from 59.2 per cent in 1990, to 63.7 per cent in 2012. During this period, the aggregate debt-to-income ratio increased by 45.3 percentage points. The increase is mainly due to a higher indebtedness among individual households who own their own home. If the households who owned their home in 1990 had had an unchanged debt-to-income ratio, the aggregate ratio would only have increased by 11.8 percentage points during the period in question. The upturn in the aggregate debt-to-income ratio in the past two decades can thus to some extent, around 26 per cent, be explained by home-owning having become more common among households.

3.5 Total effect on household debt compared with earlier studies

Our description of different factors that affect household indebtedness has in many aspects been qualitative rather than quantitative. However, it has largely highlighted the same factors as in Hansen (2013), where 77 per cent of the increase in debt 1994-2008 is explained by a number of structural factors (see Chart 3.6).

¹⁶ See Elinder and Persson (2014).

Chart 3.6 Explanations of the upturn in household indebtedness 1994-2008



Note. Other factors consist of cross-effects and later entry into the labour market.

Source: Hansen (2013)

One difference between this study and the former study by Hansen is that our assessment of the number of households owning their own home is somewhat lower. This is partly because this study only relies on data from Statistics Sweden on housing stock composition, while the earlier former study also used data on the percentage of households with interest expenditure. This indirectly captured the extent to which homeownership was linked to borrowing. Another difference is that this study has a broader picture of the development of mortgage rates, while the former study focused on households' expectations of future rates.

4 Housing supply

This section presents an overall description of supply in the Swedish housing market, since supply has a substantial effect on the demand for housing and loans. There is an analysis of, for instance, how housing construction in Sweden has developed in recent decades, given the large increase in the population and the urbanisation that characterises many regions. There is also a discussion of factors often highlighted in the debate on why not more housing is being built in Sweden.

4.1 Housing construction has varied substantially and has been low in recent decades

Over time, housing construction in Sweden has varied considerably and since the 1990s crisis it has been low compared with the decades preceding the crisis. In comparison with other countries, gross fixed investment as a percentage of GDP often appears low in Sweden.¹⁷ It can also be noted that since 2006, housing construction has not followed the rapid upswing in the population increase (see Chart 4.1).¹⁸ Englund (2011) says that a relatively low rate of construction has contributed to the rapid growth in prices on the housing market in recent decades (see Section 2).

The variations in housing construction are largely due to economic activity and the economic conditions faced by construction companies. But the most important explanations for the large shift in the number of completed homes can be related to Swedish housing policy, to changes in taxes and state subsidies aimed at housing construction.¹⁹ The state influence on housing construction was clear during the 1960s and up to the mid-1970s, when the Million Homes Programme was implemented to deal with the housing shortage caused by increasingly rapid urbanisation in Sweden. When the Million Homes Programme was complete, construction slowed down during a ten-year period and then began to increase again in the mid-1980s when the credit markets were deregulated and the conditions for financing housing construction changed.

The largest decline in housing construction took place at the beginning of the 1990s. This was partly due to the prevailing bank crisis in Sweden and the ensuing economic downturn, but also to the decline in interest subsidies and interest rate guarantees for construction projects during 1993. These changes resulted in, for instance, public housing companies being given the same funding terms and conditions as other housing market participants. The municipalities' costs for building housing thus increased substantially, which

¹⁷ See Konjunkturinstitutet (National Institute of Economic Research) (2013).

¹⁸ See, for instance, Boverket (2012a).

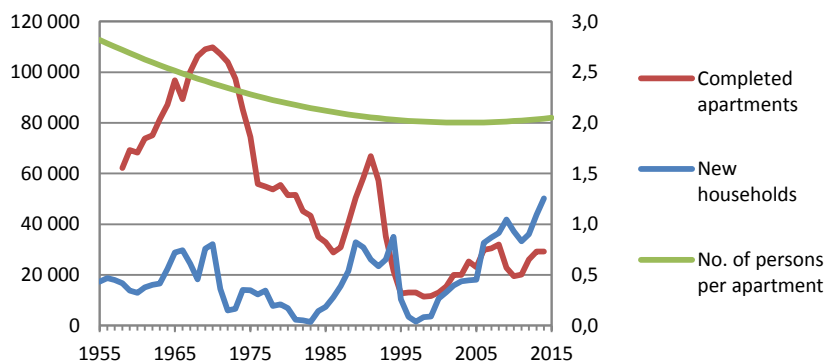
¹⁹ See, for instance, Lind (2003).

had a negative impact on construction of rented accommodation in particular. In recent decades, new-builds have increasingly been aimed at tenant-owned housing and to some extent single-family houses, while the percentage of rented accommodation in total housing construction has declined.²⁰

In recent years, new construction has begun to increase again and the forecasts by both Boverket and Sveriges Byggindustrier indicate that construction will increase in the coming years, primarily of tenant-owned housing.²¹ If the forecasts prove correct, this means that the number of new-build homes will be at the same level as in the mid-1980s. However, despite the higher level of construction, Boverket (2015a) assesses that the current rate of construction will not be sufficient to meet the coming population increase in Sweden.

Chart 4.1 Housing construction and population changes in Sweden

Number of apartments/person (left axis) and trend in number of people per apartment (right axis)



Sources: SCB (Statistics Sweden), Finansinspektionen and Sveriges Riksbank

4.2 Rising housing prices have contributed to an increase in construction

On a well-functioning market, supply is expected to increase when the price rises as a result of increased demand. The rising housing prices of recent decades should therefore, all else being equal, have led to increased housing construction as more new-build projects are becoming profitable. Profitability for new construction in the housing market can in this case be related to the relationship between the market price of an existing home and the total

²⁰ According to consultant firm Evidens (2015), the main explanation as to why private construction companies are building more tenant-owned housing and single-family houses is that there is less risk in this type of new-build project. For example, a large share of apartment blocks with tenant-owned apartments are funded by the households themselves and not mainly through external capital.

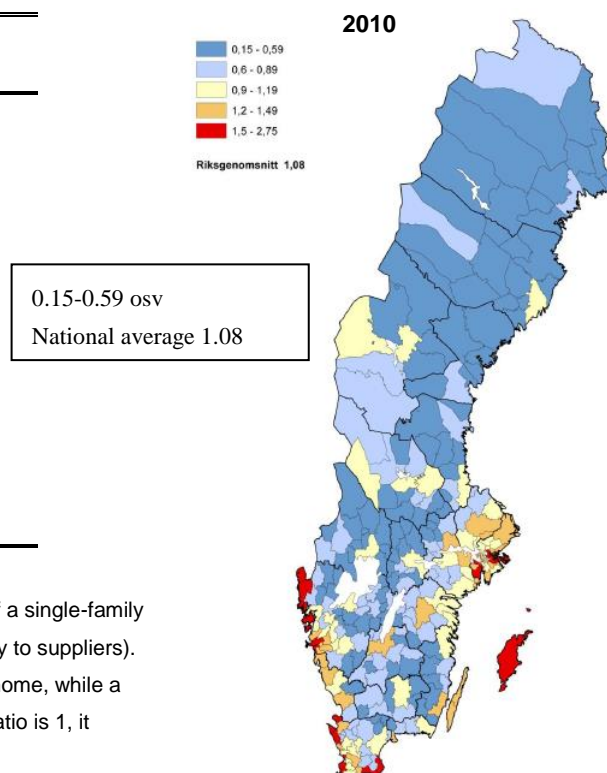
²¹ See Boverket (2015b) and Sveriges Byggindustrier (2015).

construction cost of producing a new, similar home.²² This ratio is referred to as Tobin's Q and if the ratio is more than 1, it is profitable to build.²³

Institutet för bostads- och urbanforskning (IBF) (The Institute for Housing and Urban Research) has calculated Tobin's Q in all municipalities in Sweden for the years 1980-2010, based on sale prices and production costs for single-family houses. Their calculations show that it was profitable to build a new single-family house in 32 per cent of the country's municipalities in 2010. This was an increase on 2001, when 12 per cent of the country's municipalities showed a Tobin's Q above 1 and on 2006, when 30 per cent were above 1. However, profitability has been different in different parts of the country. In most metropolitan regions, growth regions and attractive holiday spots, Tobin's Q was much higher than 1 in 2010, while it was much lower than 1 in the majority of Sweden's municipalities (see Table 4.2). The ratio for Sweden as a whole was 1.08 in 2010. Rapidly rising housing prices in recent years have contributed to Tobin's Q having increased further in several municipalities, such as the Stockholm region.²⁴

Table 4.2 – Municipalities with highest Tobin's Q in Sweden, 2006 and 2010

| Municipality | Tobin's Q (2006) | Municipality | Tobin's Q (2010) |
|--------------|------------------|--------------|------------------|
| Sundbyberg | 2.79 | Danderyd | 2.75 |
| Solna | 2.74 | Sotenäs | 2.53 |
| Danderyd | 2.50 | Lidingö | 2.43 |
| Lidingö | 2.45 | Solna | 2.36 |
| Sotenäs | 2.21 | Vaxholm | 2.29 |
| Stockholm | 2.14 | Båstad | 2.27 |
| Nacka | 2.12 | Nacka | 2.21 |
| Båstad | 1.92 | Tanum | 2.10 |
| Tanum | 1.88 | Sundbyberg | 2.04 |
| Vellinge | 1.81 | Stockholm | 2.02 |
| Öckerö | 1.81 | Höganäs | 2.02 |
| Malmö | 1.80 | Lysekil | 1.90 |



Note: Tobin's Q gives the ratio between the market value (sale price) of a single-family house and the production cost (the total price the builder has had to pay to suppliers). If the ratio is above 1, this is a signal that it is profitable to build a new home, while a value below 1 indicates that investment would not be profitable. If the ratio is 1, it

²² Englund (2011) says that, considering the long lead times in the construction process, it is the expected housing price a couple of years ahead that is significant, rather than the prevailing price.

²³ The construction companies' yield requirements mean that Tobin's Q often needs to be higher than one for a construction project to begin.

²⁴ See Boverket (2015c).

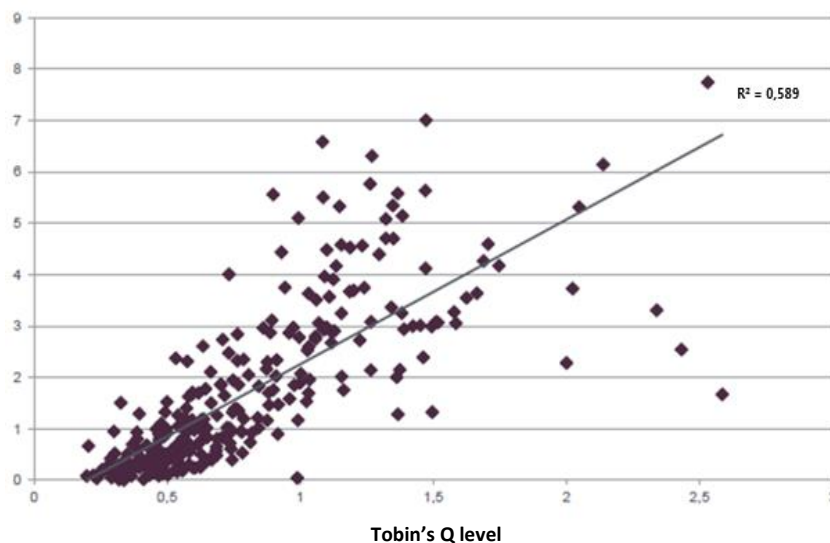
indicates that the cost of buying an existing house and building a new one are equally great and that the market is thus in balance.

Sources: Institutet för bostads- och urbanforskning (IBF) (Institute for Housing and Urban Research) and Boverket

According to a Tobin's Q analysis, it would thus have been profitable to build a new single-family house in some regions during most of the 2000s and particularly in metropolitan areas. Consultant firm WSP also shows that there is a relatively high covariation between how many homes are built and how high Tobin's Q has been in a municipality.²⁵ According to their calculations, around 60 per cent of the variation in housing construction between the municipalities in Sweden during the period 2000-2010 can be explained by the level of Tobin's Q (see Chart 4.2). A similar correlation can also be identified if one regards the change in single-family house prices in relation to the change in the number of homes in the municipality. As shown in Chart 4.3, the number of homes has increased most in municipalities that have also had the largest price rises.

Chart 4.2 Correlation between Tobin's Q and housing construction in Sweden's municipalities during 2000-2010

New-builds per thousand inhabitants



Source: TMR (2014)

²⁵ Sørensen (2013) also claims, unlike for instance England (2011), that housing investment in Sweden has responded more to developments in housing prices than has been the case in many other comparable countries, even if the level of construction has still been low.

Chart 4.3 Correlation between changes in single-family house prices and housing stock for Sweden's municipalities between 1993 and 2012



Note. Each point shows the percentage change in the nominal price of single-family houses and in the number of inhabitants in Swedish municipalities between 1993 and 2012. The price of single-family houses is calculated at the average price in each municipality.

Sources: SCB (Statistics Sweden) and Sveriges Riksbank

The rising housing prices have contributed to increased construction in many municipalities. But even if construction in these regions has been relatively higher than in other parts of the country, it has still been very low in relation to how much has been built historically and to the needs of a rapidly growing population.²⁶ Lind (2003) and Englund (2011) say that even if the value of Tobin's Q affects the incentive to build a new house, there are other factors, of a more structural nature, which can also affect the construction companies' willingness to invest. A study of how Tobin's Q has developed over time also shows that construction in, for instance, the Stockholm region is held back by other factors, as the ratio has gradually increased since the beginning of the 1990s.²⁷ The fact that it is not solely profitability that affects housing construction can be seen in the fact that the variation in construction increases the higher Tobin's Q a municipality shows (see Chart 4.2). In other words – the greater the profitability is, the more of the construction appears to be explained by other factors.

4.3 Why isn't more housing being built in Sweden?

Despite high Tobin's Q in many parts of the country and a high population growth, supply in the housing market in many regions has not adapted to the higher housing prices. The debate on why more housing is not being built in Sweden has also intensified in recent years with more inquiries and reports

²⁶ According to Boverket (2014b), total construction in the three metropolitan regions has been too small in relation to demand since the beginning of 1995. On the other hand, housing production was far too high up to 1985 and in a balance between 1985 and 1995, given their model.

²⁷ See TMR (2014).

attempting to illustrate the problems on the supply side.²⁸ There is also relatively broad agreement that it is not only one factor that has meant more housing is not being built; it is rather the result of an interplay between several different factors.

Incentives structure among different participants affects construction

A game theory view of the obstacles marking the supply side is presented by, for instance, Lind (2013). The study says that municipalities and construction companies can regard it as rational not to build more housing than is necessary. It is, for instance, far from obvious that it is in the interests of the individual municipality to build new housing as increased construction can be linked to negative external effects for the households already living in the municipality. A larger supply of housing can, for instance, reduce the prices of the housing already available in the municipality. Green areas may shrink and noise pollution may be increased, which can also push prices down. In Sweden, the municipal monopoly on planning also means that it is the municipalities that determine how local land should be used and built on. If the municipalities are large land-owners, it may be rational not to plan too much land at once, as this can mean that land prices fall in the immediate future. If many other land-owners think in the same way, few will build and prices will continue to rise. A low, but even level of construction may be in the best interests of the municipalities, as it can maximise their long-term incomes. Bergendahl et al. (2015) say that one of the most important reasons for not building more housing in Sweden is that the supply of available land has not increased at the same pace as demand, which could be explained by the municipal monopoly on planning.

Despite high demand and high housing prices, it may also be rational for private market participants not to build more than necessary. One reason for this is that the construction industry in Sweden is characterised by a shortage of competition with major entry barriers and a small number of large participants, making it difficult for new companies to become established.²⁹ The large construction companies can thus make use of their oligopoly position and keep construction down to be able to charge higher prices. Housing built by the construction companies now is competing with the existing housing stock as well as with houses that are to be built.³⁰ If construction increases, prices may

²⁸ See, for instance, Nybyggarkommissionen (the new construction commission) (2014), Bokriskommittén (the Swedish Housing Crisis Committee) (2014) and Bergendahl et al. (2015).

²⁹ Konkurrensverket (Swedish Competition Authority) (2011) has illustrated the fact that the construction and civil engineering sector in Sweden is characterised by a lack of competition in various parts of the production and distribution chain. However, there have long been competition problems in the construction industry and this has also been a constant theme of inquiries into the sector, at least from the 1960s and onwards.

³⁰ If production costs rise by, say 3 per cent a year, but there are expectations that end prices will rise by 5 per cent a year, at the same time as the entry barriers are high, it is better to build next year than now.

fall, which can lead to households expecting housing prices to fall. This can affect current demand and reduce profitability for construction companies. For the construction companies, this means that even if the rising housing prices in Sweden have made it profitable to build now, it may be even more profitable to build in the future. If it is possible to ask a high price for the end product, sub-contractors will also be able to raise their prices. This can give rise to a situation where both construction costs and land prices increase, which can further subdue housing construction.

Bergendahl et al. (2015) say, however, that it is difficult to find both theoretical and empirical evidence for the low level of housing construction being largely the result of a lack of competition in the construction sector. For instance, several foreign participants have become established on the Swedish construction market in recent years, which indicates that the market is nevertheless subject to competition if price levels enable higher profits.

Land prices and construction costs have risen

One factor that is often highlighted as an explanation as to why more homes are not built is that it is expensive to build new housing in Sweden, and much more expensive than in many other countries. This is based on the argument that current planning, construction and environmental legislation makes substantial demands on the housing built. For instance, noise pollution limits must not be exceeded, lifts must be installed and toilets must be adapted to allow access for persons with disabilities. Moreover, the cold climate in Sweden entails different technical requirements than in, for instance, southern Europe, which pushes up costs for the construction companies.

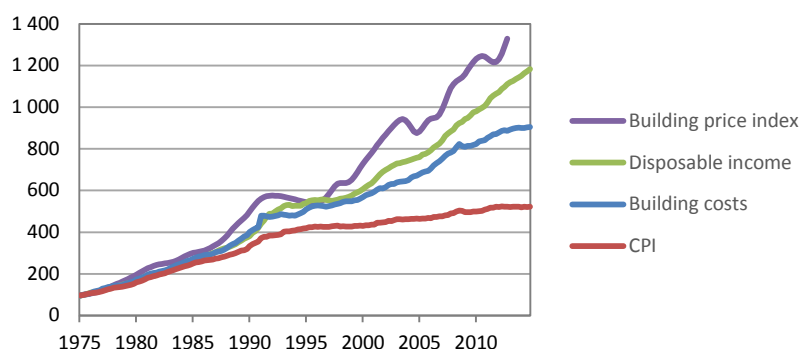
In recent decades, construction costs have also increased by a relatively large amount in Sweden. Chart 4.4 shows how construction costs have developed in relation to the consumer price index (CPI) and disposable income for the household sector. The chart shows that construction costs (measured as *factor price index*, that is, production costs excluding land costs) have increased much faster than the CPI since the beginning of the 1990s, but somewhat more slowly than household incomes.³¹ The chart also shows construction costs including land costs (measured as the *building price index*, that is, what the builder pays). This measure has increased much faster than both household income and the CPI, which indicates that land prices have also risen substantially in recent decades.³²

³¹ Since part of the production costs is labour (which is expected to follow developments in income) and part is material costs (which are expected to follow the CPI), the total building costs should be lower than developments in income, but higher than the CPI.

³² However, the building price index has been criticised for not taking into account the improvement in the quality of housing over time, which means that the measure to some extent overestimated building costs.

Chart 4.4 Development of building costs, the CPI and disposable income

Index, 1975 = 100



Note. Building costs are the factor price index that measures production costs. The building price index measures price changes for residential buildings, adjusted for changes in quality and regional differences.

Source: SCB (Statistics Sweden)

It thus appears that in relative terms construction costs have increased substantially in Sweden in recent years, which could be a partial explanation as to why housing construction has been so low. Sweden is often high up in comparisons of construction costs with those in other countries.³³ But according to Boverket (2014c), the differences are exaggerated as they are not as large if one instead compares Swedish construction costs with those of countries that have conditions similar to those in Sweden, for instance, the other Nordic countries. Boverket claims that although the increased construction costs in Sweden in recent years are probably due to high demand and rising land costs, this is not unique to Sweden. From a Nordic perspective, construction costs in Norway, for instance, have increased faster than those in Sweden. Nevertheless, construction has been higher in Norway than in Sweden.

To summarise, the above review indicates that construction costs have risen rapidly in recent years. But this is not just a Swedish phenomenon and does not explain why housing construction is relatively low in Sweden. Moreover, the results of the Tobin's Q analysis show that it would have been profitable to build more in many municipalities. This indicates that it is not high construction costs that are the main reason for the observed low level of construction.

State subsidies have declined

Parallel with the higher construction costs, state subsidies to construction companies have also declined in recent decades. According to Sveriges Bygginstitut (2004), housing subsidies declined from the equivalent of 3 per cent of GDP in 1991 to 0.7 per cent of GDP in 2003. Previously, the higher

³³ According to Eurostat, construction costs in Sweden exceed the average in EU15 by a good 65 per cent. However, Boverket says that cost comparisons between countries are often misleading as housing is a heterogeneous product and there is a lack of comparable data.

state housing subsidies meant that building contractors took a relatively small financial risk, regardless of whether they were private or municipal. They were therefore not averse to starting several new-build projects. This applied in particular to the building of rented accommodation.³⁴ But as both the investment subsidies and interest rate guarantees have been phased out, the financial risk linked to new-build projects has increased. This appears to have reduced the construction companies' willingness to invest.

Land and planning processes take too long

A further obstacle that holds back housing construction is the long processes required for land acquisition and planning, which considerably prolong the building process as a whole. It also increases the financial risk linked to the building project. For instance, the economic situation can change during the time the housing is being built. Moreover, the building often has to be approved in relation to the detailed plans for the area and by application for building permission. It is also possible to appeal against a municipal decision and in many cases both the zoning plans and building permission are subject to appeal. If the planning process is also protracted and uncertain and fewer companies are involved as developers, there may be relatively few land areas that can be built on at any given time. Once the land is ready for development, it has to be auctioned off and then the land prices may rise.

The time required before building can start varies substantially from one building project to the next (see Chart 4.5). Although the average time before building can commence in Sweden does not differ from other countries, there is a risk that it may take considerably longer. Lind (2003) says that these long lead times create uncertainty for the participants in the market and that this means that only a few financially strong companies have the resources to begin various new-build projects.^{35,36} This hampers competition in the market and can lead to less building. International studies have also shown that stricter regulations are often followed by lower levels of housing construction and higher housing prices.³⁷

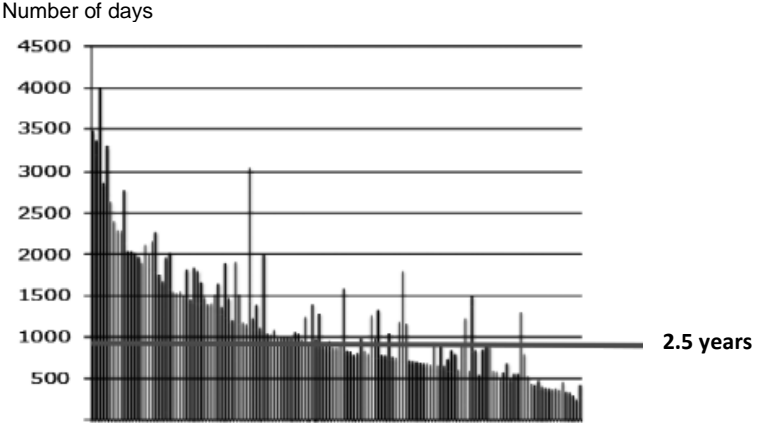
³⁴ See Evidens (2015).

³⁵ Boverket (2011) says that the financing conditions for large construction companies have been good during the 2000s, although the conditions for smaller companies have been poorer.

³⁶ The importance of good knowledge of Swedish construction conditions make it difficult for foreign companies to become established in the market, which can inhibit competition.

³⁷ See, for instance, Luger and Temkin (2000) and Boulhouwer and deVries (2002).

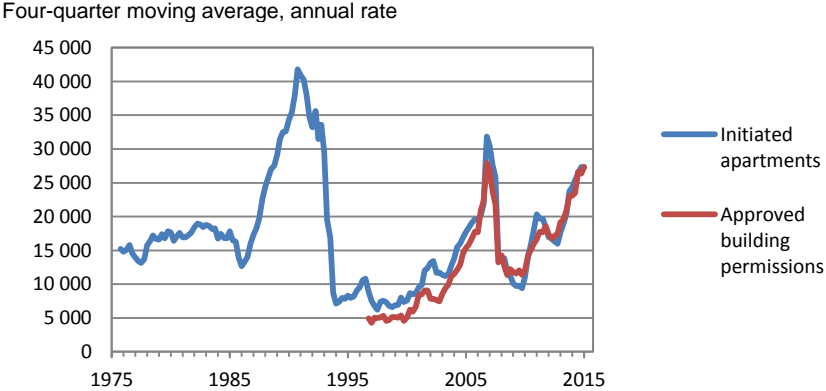
Chart 4.5 Time, including waiting time before active project start, to adoption and possible appeal of more than 150 zoning plans



Source: Stadsbyggnadsbenchen (Benchmark cooperation between 9 municipalities in Stockholm)

However, despite the potential obstacles in the planning and building process in Sweden, it is possible to detect rapid changes in the data on the number of building permits granted (see Chart 4.6). Neither the upturn in the number of building permits granted in 2004-2007, nor the rapid downturn in 2007-2008 appear to be linked to the regulations being worded differently or being applied in different ways. This also makes it difficult to believe that changes in planning and building processes will lead to a much higher level of construction.

Chart 4.6 Number of apartments on which construction has begun and approved building permits for apartment blocks



Source: SCB (Statistics Sweden)

Rent regulations can increase the risks and reduce profitability

Another factor that holds back the construction of rented accommodation is the regulations covering the rental market in Sweden.³⁸ Eriksson and Lind (2005) say that today's rent regulations can in several different ways lead to fewer rented homes being built. For example, a rent that is lower than the market price contributes to making it less profitable to build new rented accommodation. Similarly, poorly designed rent regulations can lead to major differences in cost between new and existing rented accommodation. If demand then falls, it will mainly affect the new stock first, as they often have higher rents. This risk is particularly relevant in the parts of the country where housing waiting-lists are much shorter than they are in the cities. This affects the financial risk in this type of new-build project, which thus affects the incentive to build rented accommodation.

Eriksson and Lind (2005) nonetheless claim that these factors cannot satisfactorily explain the low level of new construction of rented accommodation in Sweden. Instead, they draw the conclusion that the construction companies have chosen to build tenant-owned housing instead of rented accommodation as it has been more beneficial in tax terms and more people are willing to pay for tenant-owned housing.³⁹ They also say that the economic climate has benefited the construction of tenant-owned housing, as investors have often got their money back quickly when housing prices and the stock market have risen.

To summarise, there are several explanations as to why the supply of housing is not greater in Sweden. For example, the public sector, both central and local government, does not take on such a large risk in housing construction as before and the state subsidies for new-builds have been significantly reduced. Moreover, new construction is affected by a distorted incentives structure for both private and municipal companies, which holds back access to land that is ready for building, for instance. At the same time, there are laws and regulations that push up construction costs and also hamper competition on the market. Similarly, regulations on the rental market have affected the incentives to build new rented accommodation. Several factors have thus contributed to the supply of housing not having increased at a pace that would have been able to meet the increased demand for housing and loans in recent decades.

³⁸ The regulations on the rental market in Sweden have been in existence since the end of the Second World War and rents are basically determined by two different principles: the utility value principle and the collective negotiating system. According to the utility value system, a rent must be reasonable and be determined by different factors, e.g. the size of the apartment, the standard of repairs, access to a lift or its lay-out. The collective negotiating system is based on collective negotiations between the tenant and the landlord. In Sweden, tenants are often represented by the Swedish Union of Tenants (Hyresgästföreningen) while landlords are often represented by the Swedish Property Federation (Fastighetsägarna).

³⁹ For example, the Bostadsbeskattningskommittén (Housing Taxation Committee) (2014) says that the property charge in connection with company taxation means that the returns on investment in rental properties are subject to double taxation.

5 Composition and efficacy of the housing market

New homes make up a very small proportion of the total housing stock. Therefore, utilisation of the existing housing stock is of considerable significance as regards price development and mobility on the housing market.⁴⁰ This section provides an broad description of the composition of the Swedish housing market and looks at current supply and demand. How factors such as rental market regulations and housing-related taxes affect the market's efficiency is also discussed.⁴¹

5.1 Several analysts believe that there are housing shortages in many parts of the country

The low level of housing construction in recent decades has contributed to the apparent housing shortages in many parts of Sweden. Boverket (2012a) has estimated that there was a shortage of between 90,000 and 160,000 homes in Sweden in 2012. The biggest shortage was in the Stockholm region, where the deficit was estimated at between 28,000 and 51,000 homes.^{42, 43} Stockholms Handelskammare (Stockholm Chamber of Commerce) (2013) believes that the deficit in the Stockholm region is even larger, around 120,000 homes, given the increase in the population seen in the region in recent years. The number of inhabitants per home has also risen in the Stockholm region, other metropolitan regions and several high-growth cities. In the country as a whole, however, household size has basically remained constant in recent decades after having decreased considerably from the 1960s onwards.⁴⁴ Moreover, according to data from Statistics Sweden, other density indicators, such as average living space per person, show that Swedish households still have a relatively large amount of space to live in compared to many households in Europe.

The estimates of the size of the deficit are however sensitive to different assumptions and how the housing shortage is defined. This makes it difficult to

⁴⁰ According to Englund and Ioannides (1993) for example, countries with low housing market mobility are often adversely affected by large-scale variations in housing prices. This is particularly true if households are faced with substantial costs when they move house. Caldera, Sanchez and Andrews (2011) also say that high transaction costs have a negative effect on mobility and point out at the same time that less strictly regulated rents have a positive effect.

⁴¹ Boverket (2014), point out for example that the rental market regulations in Sweden and the capital gains tax on property sales are two reasons why the existing housing stock is being utilised ever more poorly with, for example, longer and longer housing waiting-lists in metropolitan areas.

⁴² The deficit in housing is defined by Boverket (2012a) as the difference between the current stock and what would be required to eliminate excessive housing prices. Excessive price refers to the price rise that exceeds the rise caused by the increase in population.

⁴³ Later studies, such as Boverket (2014a), state that the deficit is slightly lower given the deviation from the average household size between 1990 and 2013.

⁴⁴ The differences in the country are considerable and in twelve of Sweden's 21 counties, household size has indeed been falling over a long period of time (Boverket (2013a)).

measure the size of the housing shortage in quantitative terms. Another problem is that a large proportion of the surplus in demand is in many cases not captured by the models. It is for example difficult to estimate how many households actually want to move to a certain region but don't because they can't find anywhere to live there. Furthermore, there can be a surplus of a certain type of home that is not in demand among households, and thus constitute no reason for them to move. Boverket (2014d) states for example that the Swedish market for tenant-owned housing is accessible for large groups of people, but only in certain locations. The housing shortage is therefore partly a shortage of housing in areas where households would prefer to live.⁴⁵

There are however some qualitative indicators that constantly track the supply side of the housing market and that can supplement the quantitative studies. Such an indicator is Boverket's annual housing market survey that poses questions to the country's 290 municipalities on how they perceive the housing situation in their area. The 2014 housing market survey shows that there is a housing shortage in many part of Sweden. In 2013, 43 per cent of Sweden's municipalities stated that the local housing market was characterised by a housing deficit in relation to demand.⁴⁶ At the end of the 1990s, only 11 per cent of the municipalities said that there was a housing shortage (see Chart 5.1).⁴⁷ The 2015 housing market survey shows that an increasing number of municipalities consider there to be a lack of housing.⁴⁸

⁴⁵ Boverket (2014d) and Boverket (2015c) conclude that in locations where the supply of land is greatest, i.e. outside city/town centres, people's willingness to pay falls rapidly to levels that make it difficult to build new tenant-owned housing at a profit. This is also true of peripheral areas that are considered to have good communications.

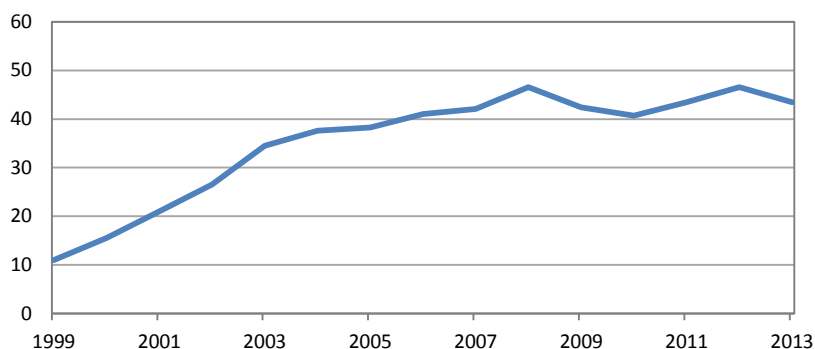
⁴⁶ This means that about 67 per cent of Sweden's population live in a municipality that has reported a housing shortage.

⁴⁷ The fact that municipalities report a housing shortage does not necessarily mean there is a need to build new homes. One of the drawbacks of the survey is that the municipalities don't say how large the shortage is. For more information see Boverket (2013b).

⁴⁸ See Boverket (2015c).

Chart 5.1 Percentage of municipalities that report a housing shortage in Sweden

Per cent



Source: Boverket

According to Sweden's municipalities, there is above all a shortage of housing for groups that cannot afford or do not have the possibility otherwise to buy their own home, such as pensioners, newly arrived migrants, students or single parents. An increasing number of municipalities have therefore said that there is a particular shortage of rented accommodation. In 2013, for example, 246 municipalities, or almost 85 per cent, stated that there was a lack of rented accommodation in their area. Even municipalities that said there is a balance, or even a surplus of homes, consider the supply of rented accommodation to be lower than the demand. Just under a third of the municipalities consider there to be a shortage of tenant-owned housing in their area.

The perception that the lack of tenant-owned housing is not just a problem for metropolitan regions is also indicated by the survey distributed by Hyresgästföreningen (Swedish Union of Tenants) to 185 public housing companies in 2014. This survey indicates that housing waiting-lists are getting longer and that it can take several years to find rented accommodation in many parts of the country. According to Bokriskommittén (Swedish Housing Crisis Committee) (2014), this is particularly relevant in Stockholm, where the expected waiting-time rose from just under 5 years in 2009 to 8 years in 2013.

5.2 Many rented homes have been converted into tenant-owned housing

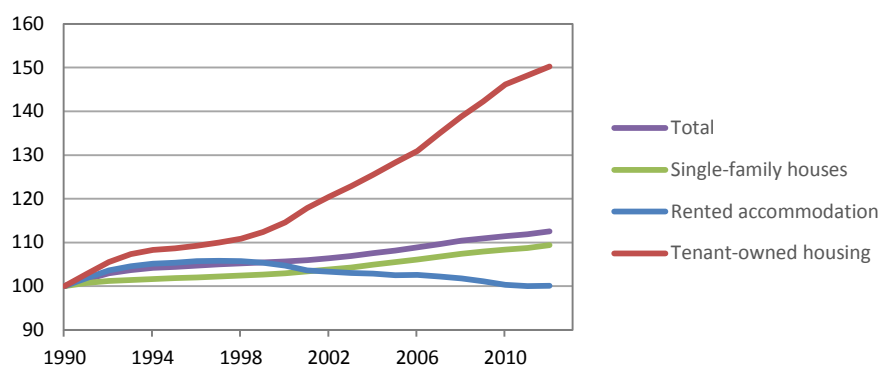
The shortage of rented accommodation depends to a large extent on its very low net addition over the last decades. From 1990 and up until 2011, the number of rented homes had only risen marginally while the number of tenant-owned homes increased by over 300,000 during the same period (see Chart 5.2). One reason for this development is that a large proportion of the country's rented homes have been converted into tenant-owned housing. Between 1991 and 2011, around 201,000 new rented homes were indeed built in Sweden but at the same time about 181,000 rented homes were converted to tenant-owned housing. The biggest share of conversions took place in the Stockholm region.

For every rented home built in Stockholm between 1991 and 2010, three disappeared as a result of conversions.⁴⁹

⁴⁹ See Boverket (2012a).

Chart 5.2 Change in the housing stock, 1990-2012, different forms of occupancy

Index, 1990 =100



Source: SCB (Statistics Sweden)

For certain households, the conversions have been associated with considerable economic gain since the price is often more favourable than the market price. For society as a whole, however, it has contributed to increasingly high indebtedness as more households have taken on debt (see Section 3).⁵⁰ The opportunities for conversion have on the other hand also contributed to more households now owning their own home and at the end of 2014, 62 per cent of the housing stock was either a single-family house or a tenant-owned home (see Table 5.1).⁵¹ This is an increase of 4–5 percentage points compared to 1992.

Table 5.1 Composition of the Swedish housing stock at the end of 2014

| | Number of homes | Share of total stock |
|-----------------------|------------------|----------------------|
| Privately owned homes | 1,842,044 | 39 % |
| Tenant-owned homes | 1,028,079 | 22 % |
| Rented homes | 1,491,923 | 32 % |
| Special needs homes | 226,731 | 5 % |
| Other units | 77,855 | 2 % |
| Total | 4,666,632 | 100 % |

Note. Special needs homes are homes for older people, persons with disabilities and students. Other units are buildings that are not intended for housing purposes, e.g. buildings intended for business activities or with some kind of social function.

Source: SCB (Statistics Sweden), Nationella lägenhetsregistret (National Apartment Register)

⁵⁰ See Hansen (2013).

⁵¹ Tenant-owned housing is of course not personally owned property as the tenancy-owner only owns the right of disposal on the apartment. In a legal sense, tenant-owned housing is classed as personal property. The property is owned by the housing cooperative, of which the tenant is a member.

5.3 Rental market regulations and transaction costs affect mobility

There are studies indicating that mobility on the Swedish housing market is high in an international comparison (see Chart 5.3). Despite this, there are several factors that can restrict mobility. As mentioned earlier, the Swedish rental market is regulated in such a way that some rented accommodation have a lower rent than the market price would imply.⁵² These regulations do not apply to new-build rented accommodation. This has contributed to average rents for new-build rented accommodation being considerably higher than average rents for existing rented accommodation over a long period of time (see Chart 5.4). In 2006, the utility value system was supplemented with presumptive rents for new-builds, in order to increase the incentive for building new rented accommodation.⁵³ This led to the gap between rents for new-builds and rents for existing stock widening even further.

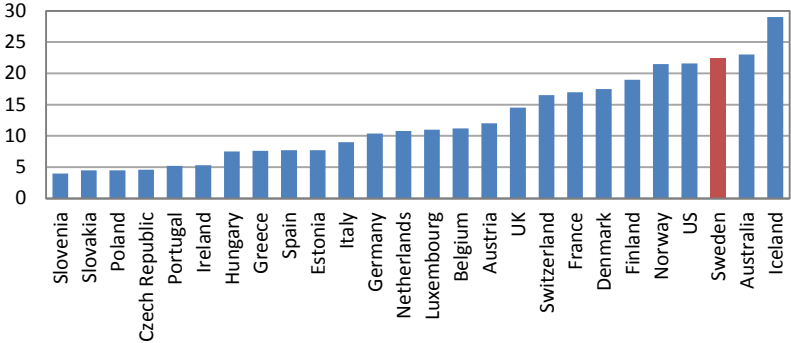
This difference in rent levels can mean that households with a tenancy agreement for a rented home lack the financial incentive to move to a new apartment with a higher rent. This can affect mobility in the housing sector and in the long term lead to welfare losses for society. According to Boverket (2013c), 90 per cent of the welfare losses caused by the way current rental market regulations are designed could be avoided if existing housing was utilised more efficiently. Bergendahl et al. (2015) stress that the utility value system leads to an increase in transaction costs, mainly in the form of searching time.

⁵² The regulations on the rental market in Sweden have been in existence since the end of the Second World War and rents are basically determined by two different principles: the utility value principle and the collective negotiating system. According to the utility value system, a rent must be reasonable and be determined by different factors, e.g. the size of the apartment, the standard of repairs, access to a lift or its lay-out. The collective negotiating system is based on collective negotiations between the tenant and the landlord. In Sweden, tenants are often represented by Hyresgästföreningen (Swedish Union of Tenants) while landlords are often represented by Fastighetsägarna (Swedish Property Federation).

⁵³ A presumptive rent is the rent for new-build homes agreed on by the landlord and the tenants' association.

Chart 5.3 Mobility on the housing market, OECD countries, 2007

Per cent, proportion of households who have moved within the last two years

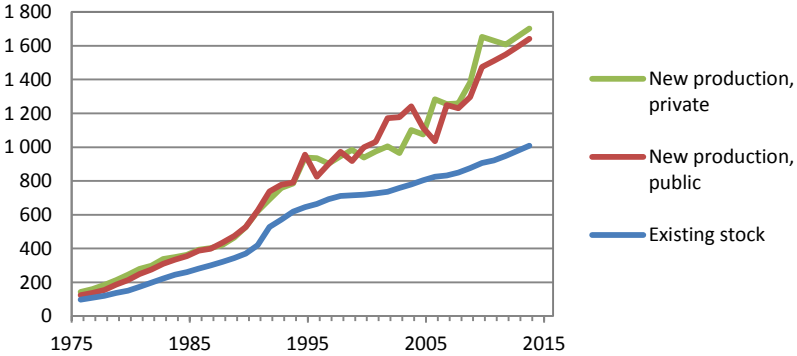


Note. The low mobility for some countries means that the data should be interpreted with considerable caution. Unfortunately, this is the only data on mobility available.

Source: Caldera, Sanchez and Andrews (2011)

Chart 5.4 Average rent per year and square metre, 2 rooms and a kitchen

SEK



Source: SCB (Statistics Sweden)

Another factor that contributes to higher transaction costs for Swedish households and that can also lead to a higher demand for more expensive homes is Sweden's capital gains tax (see also Section 3). Capital gains tax means that households that have sold their home at a profit must pay tax on some of the gain.⁵⁴ This may lead households to refrain from moving if the value of the homes rises significantly. Households can however defer the tax if the profit is used to buy a new, more expensive home. The possibility to defer consequently alleviates the lock-in effect when purchasing a tenant-owned home or single-family house. Households who want to move to rented accommodation must however pay the full capital gains tax, which instead increases the lock-in effect. This tax structure creates incentive for greater homeownership and above all increases the demand for more expensive

⁵⁴ In conjunction with the abolition of the state property tax on housing in 2008 and the subsequent introduction of a municipal property charge to replace it, the capital gains tax on private housing was raised from 20 to 22 per cent of the profit. It was still possible to defer the tax although new deferment amounts were limited to SEK 1.6 million.

housing. This is particularly true when housing prices rise considerably, which they have done in Sweden in recent decades.

6 Supply of credit from the banks

One explanation for the increase in Swedish household indebtedness since the early 2000s is that Swedish banks have been able to lend money when the demand for mortgages among households increased. An important prerequisite for this is the banks having good access to low-interest funding. Furthermore, the capital requirements for mortgages have been low for long periods of time. Since 2010, the growth in banks' mortgage lending has subsided. This can probably be explained by the less favourable economic climate in Sweden and the euro area, but also by the tightening of capital requirements and introduction of risk weight floors.

6.1 The banks' market funding and scope for issuing mortgages

The major Swedish banks – Nordea, Handelsbanken, SEB and Swedbank – fund much of their lending by issuing securities, i.e. bonds and certificates, on the international capital markets. By doing this, they broaden their investor base. This broader investor base has given them greater access to funding, and allowed them to fund Swedish mortgages more easily and cheaply.⁵⁵ This has in turn enabled them to lend larger volumes to Swedish households. There are several reasons why the banks' market funding started to grow particularly during the early 2000s. Firstly, global saving was high and this pushed down long-term real interest rates in many countries. At the same time, the financial markets had gradually become more integrated since the mid-1990s. This made it easier and cheaper for Swedish banks to issue securities abroad and to borrow money in foreign currency. Another possible reason why Swedish banks found it easier to capitalise on the international capital markets was that they switched over to issuing so-called covered bonds in the early 2000s. This may have further broadened their investor base (see below).

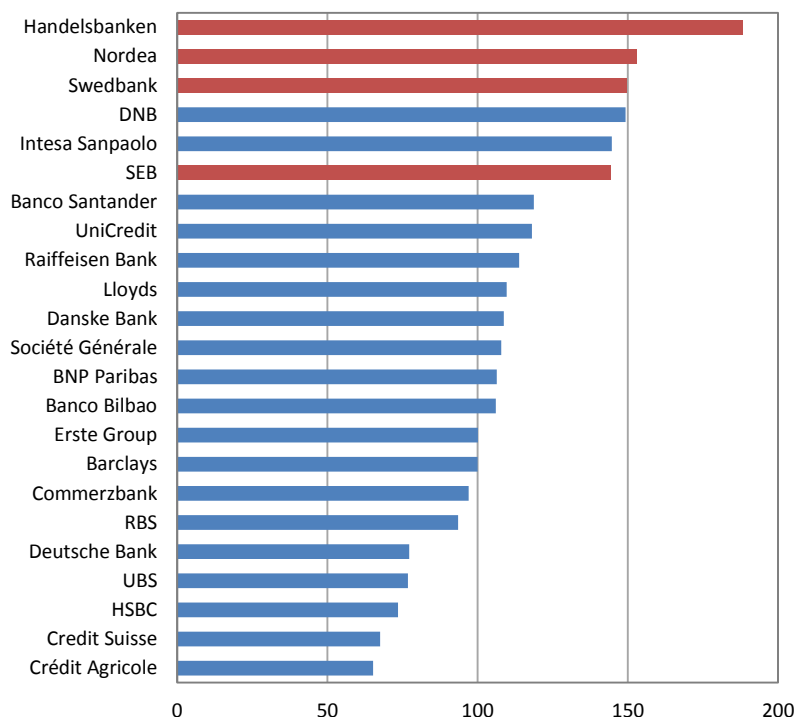
One reason why Swedish banks fund a relatively large share of their lending via market funding is that for a long time Swedish households had started investing their savings in securities instead of in traditional savings accounts.⁵⁶ As a result, Swedish banks built up a significant deposit deficit compared to banks in many other countries (see Chart 6.1). If households do place their money in banks to the same degree as the banks lend, the banks have to find other means of funding. To fill the gap they chose was to issue securities. Nilsson et al. (2014) discuss whether it is Swedish collective pension savings that has led Swedish households to start saving less at banks. Since the mid-1990s, payments into occupational pension schemes and the premium pension system have increased to such an extent that they now constitute about a third of Swedish households' assets.

⁵⁵ See Sveriges Riksbank (2014a).

⁵⁶ Ibid.

Chart 6.1 Lending in relation to deposits

December 2014, per cent



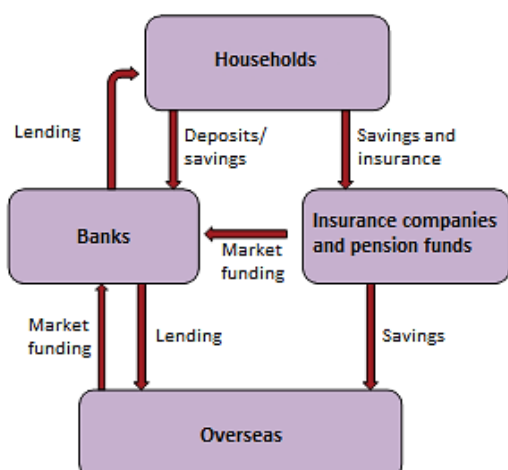
Note. Average over the last four quarters.

Sources: SNL Financial and Sveriges Riksbank

Between 1996 and 2014, Swedish banks increased their lending to households by SEK 2,200 billion, from SEK 800 to SEK 3,000 billion. In contrast, household savings at the banks rose by only about SEK 900 billion, from just under SEK 500 to around SEK 1,400 billion. Swedish banks' funding via bonds and certificates increased instead by almost SEK 2,700 billion, from just over SEK 1,000 billion at the end of the 1990s to almost SEK 3,700 billion in 2014. This increase hence reflects the deficit built up by the banks when households' bank deposits diminished. At the same time, collective pension savings have constituted an ever-greater share of households' financial assets. Since the mid-1990s, they have overtaken bank savings as the largest component of households' financial assets. In 2013, they amounted to almost SEK 2,400 billion.

Households' collective pension savings are primarily invested in funds or are managed by pension companies and fund managers. Some of them are invested in the securities issued by Swedish banks, primarily covered bonds (see below). This means therefore that it is still Swedish households' savings that are funding the banks' lending, but they do it indirectly via the securities market (see Chart 6.1).

Chart 6.1 Flows in the financial system



6.2 The role of covered bonds in the banks' supply of mortgages

As mentioned above, the fact that the banks switched over to funding mortgages via covered bonds is another reason that is considered to have influenced credit supply. Swedish banks have traditionally funded their mortgages by mortgage institutions issuing mortgage bonds. Swedish legislation on covered bonds that came into force in 2004 led to a shift in bank funding. Between 2006 and 2008, Swedish banks moved from issuing mortgage bonds to issuing covered bonds. This may have paved the way for a broader investor base, which in the long term made it possible for them to fund a larger amount of mortgages (see above). Data from the years after the switchover to covered bonds do not however show any major shift from one investor category to another. On the other hand, the switchover to covered bonds meant that both Swedish and foreign UCITS funds⁵⁷ had to hold a greater proportion of covered bonds in their portfolios than mortgage bonds. Data also show that this period saw a change in ownership, with foreign investors reducing their holdings of Swedish bank covered bonds while Swedish banks increased theirs.

Even if covered bonds work in many respects as mortgage bonds, there are important differences. One is that there is a contract for mortgage bonds between the issuer and the investor whereas covered bonds are regulated by legislation overseen by national authorities.⁵⁸ In contrast to mortgage bonds, covered bonds involve the investor having a claim on both the issuer and on the underlying collateral. This means that if the bank or the issuer were to go

⁵⁷ Investment funds are regulated by the European UCITS directive.

⁵⁸ Each country has its own legislation for covered bonds. There are however normative regulations at EU level, see for example Sandström et al. (2013) for a comprehensive review of the regulatory framework governing covered bonds.

bankrupt, the investor is given priority to certain assets. This asset (mortgage) buffer is often larger than is required by the legislation, which means there are margins if the assets fall in value, e.g. in a housing price slump. Furthermore, covered bonds are exempted as a bail-in tool in accordance with the Bank Recovery and Resolution Directive (BRRD)⁵⁹. This means that covered bonds cannot be converted to equity in order to recapitalise banks in a crisis.

This means that investors are more protected with covered bonds as they don't require the same high rate of return to invest in covered bonds as in non-covered bonds. The low risk for investors also means that covered bonds are treated much more favourably in the regulatory frameworks that govern how certain types of investor, such as a bank or a fund, may act. In many contexts, they are treated almost the same as government bonds. According to capital regulations, investors in covered bonds (often banks) need therefore not hold as much capital as a buffer against possible losses as when they invest in non-covered bonds. Investors can thus increase their holdings of covered bonds without needing to increase their own capital. These factors increase the demand for covered bonds from investors looking for low-risk investment options.

Since the risks of covered bonds are lower, investors don't require the same high rate of return as they would on non-covered bonds.⁶⁰ It is therefore also profitable for the banks to increase their supply of covered bonds. It provides a good source of funding at a relatively low cost. In turn this means that the banks are able to issue large amounts of mortgages. If one assumes that all funding via covered bonds goes to mortgages, the mortgages become cheaper. In practice, the major Swedish banks fund an average of 75 per cent of a mortgage via covered bonds. The bank funds the rest of the loan either via deposits from the general public, short-term non-covered funding or long-term non-covered funding.

The Swedish market for covered bonds

Currently, eight Swedish banks or their mortgage institutions are allowed to issue covered bonds. These are Swedbank Hypotek AB, Stadshypotek AB (Handelsbanken), SEB, Nordea Hypotek AB, AB Sveriges Säkerställda Obligationer (SBAB) Länsförsäkringar Hypotek, Landshypotek Bank AB and Skandiabanken.

Covered bonds with mortgages as collateral presently form the main part of the banks' securities funding, which, in turn, is a large part of the banking system's total funding. Covered bonds issued by Swedish banks in accordance with Swedish legislation amounted at the end of 2014 to SEK 2,000 billion. This can be compared to the volume of government securities that amounted to SEK

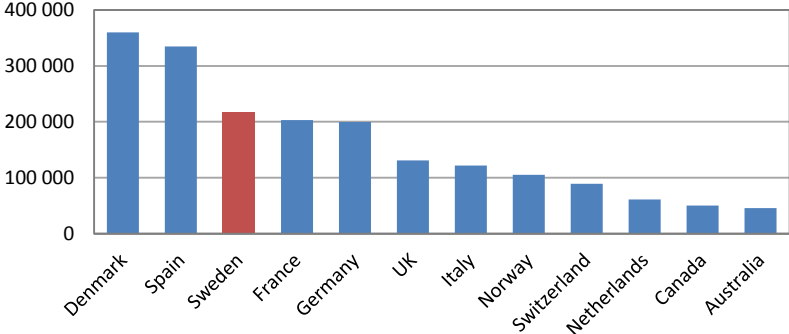
⁵⁹ Directive 2014/59/EC of the European Parliament and of the Council of 15 May 2014. See, for example, Eliasson et al. (2014).

⁶⁰ See Juks (2012).

794 billion at the same point in time.⁶¹ The Swedish market is currently the third largest market in the world for this type of security (see Chart 6.2).

Chart 6.2 Outstanding covered bonds with mortgages as collateral

2013, EUR million

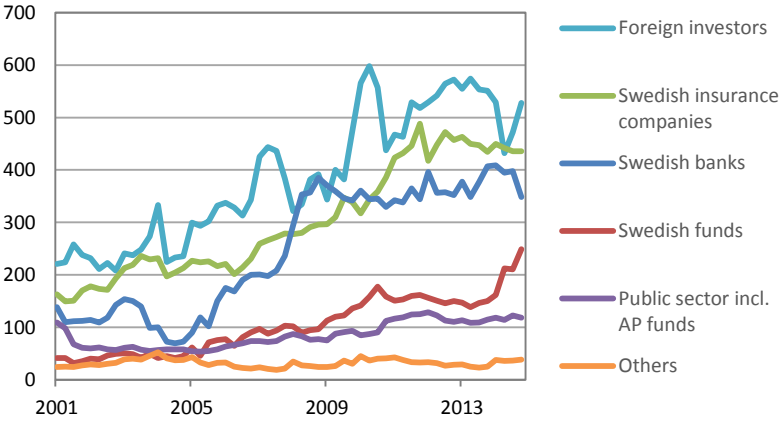


Sources: European Covered Bond Council and Sveriges Riksbank

Among Swedish investors, it is primarily insurance companies, other banks and the AP funds that purchase the Swedish banks' covered bonds. Swedish banks invest in covered bonds partly in order to have a buffer of liquid assets and partly to have a bond stock to trade with. Swedish banks hence act as market makers. Even foreign investors consist to a large part of asset managers such as investment funds and insurance companies (see Chart 6.3).

Chart 6.3 Swedish banks' covered bonds, volume and owner

SEK billion



Note. Refers to covered bonds issued in SEK and in foreign currency.

Sources: SCB (Statistics Sweden) and Sveriges Riksbank

⁶¹ Swedish banks also issue covered bonds in countries such as Denmark, Norway and Finland in accordance with legislation in these countries. This borrowing primarily funds the banks' operations in these countries.

6.3 Relaxations in credit granting have been followed by restraints⁶²

The Swedish mortgage market has grown substantially since the early 2000s. In 2014, mortgages made up almost 50 per cent of Swedish banks' total assets. This can be compared with around 30 per cent in 2001. Household indebtedness rose most rapidly in the period 2003-2010. This period coincided with a number of relaxations in credit granting, see below. After 2010, the rate at which debt increased slowed down, at the same time as restraints aimed at reducing credit granting were introduced. This period is also characterised by weak economic activity both in Sweden and the rest of Europe. Debts have begun to rise more rapidly again in recent times.

The Second Basel Accord eased the requirements

The Second Basel Accord (Basel II) is a component of the international regulatory framework for banks launched in 2004. It included new capital adequacy regulations that went into force in Sweden in 2007. It gave the banks the opportunity to calculate the risk weights for their assets themselves, provided that their calculation models were approved by Finansinspektionen. The aim of allowing the banks to use internal calculation models was to create a closer link between the actual risks and the capital requirements.

When calculating these risk weights, historical loan losses have a major impact on the results. Since the Swedish banks historically speaking have had virtually no loan losses on mortgages, the risk weights will be lower in comparison with other European banks hit by higher credit losses. This means that the banks did not need to hold as much equity as before. In accordance with the new regulatory framework, banks could therefore reduce their equity given the same assets. Alternatively, the bank could hold the same amount of equity but increase its mortgages and at the same time maintain its capital ratio, i.e. its equity divided by its risk-weighted assets.

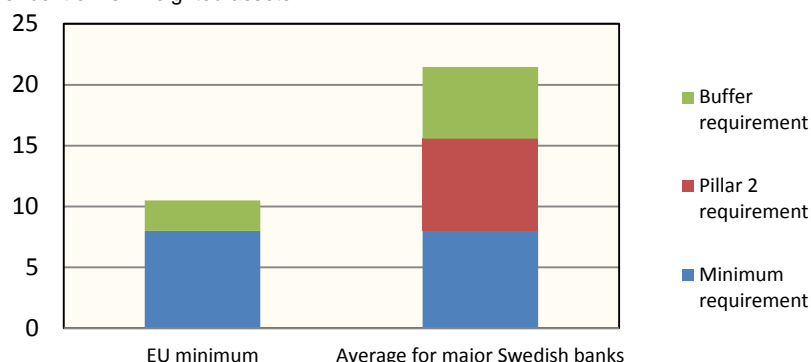
The Third Basel Accord tightened the requirements

As a consequence of the financial crisis, the authorities have tightened the risk-weighted capital requirements. The total capital requirements consist of different components, including minimum capital requirements, Pillar 2 additions and buffer requirements (see Chart 6.4). In relation to European minimum requirements, the average requirements placed on the major Swedish banks are twice as high.

⁶² See Sveriges Riksbank (2014a).

Chart 6.4. Capital requirements placed on banks

Per cent of risk-weighted assets



Source: Finansinspektionen (2015b)

The level of the risk weights on mortgages appeared to be low in 2013 with reference to the fact that historical credit losses are not always a good indicator of the size of possible credit losses in the future. As a result, Finansinspektionen gradually introduced higher floors for mortgage risk-weights, initially at a minimum of 15 per cent and then, as a second stage, at a minimum of 25 per cent.

Finansinspektionen has also decided to increase the countercyclical capital buffer for Sweden, and establish a buffer rate of 1.5 per cent. The countercyclical capital buffer rate shall apply as from 27 June 2016. Factors underlying the decision include the upward trend in household lending, the rapidly increasing housing prices and the lack of an amortisation requirement.

6.4 Good access to funding of mortgages led to generous credit terms

For the last few decades, the banks have been able to fund large volumes of mortgages at relatively little expense, which in turn has made it possible for them to offer mortgage borrowers generous terms. These generous terms then resulted in an increase in the demand for mortgages. This was particularly common in the 2000s and became a way for the banks to increase their market shares. Below we list a number of changes in credit terms that have taken place over the last 15 years.

Lower funding costs for banks led to lower mortgage rates

The low funding costs for the banks also affected the rates they offered to households. Throughout almost the entire period since the mid-1990s, nominal mortgage rates fell (see also Sections 2 and 4). These low rates naturally led to a decrease in the banks' margins on mortgages during the 2000s but the fact that they were able to offer large volumes of mortgages still made it a profitable venture. In addition, the banks were able to increase their income by selling other services, such as mutual-fund and pension saving, to their mortgage customers.

The banks allowed higher loan-to-value ratios

For a time, the Swedish banks permitted higher and higher loan-to-value ratios. After the turn of the century, Swedish households' loan-to-value ratios for new loans increased from about 60 per cent to just over 70 per cent in 2011. SBAB, for example, raised their loan-to-value limit for first mortgages from 70 to 75 per cent in the summer of 2003 on the grounds that the highest loan-to-value ratio of the assets in the collateral pool is 75 per cent of the market value according to the new law from 2004 governing the issuing of covered bonds. During this period, a household could in some cases finance its entire housing purchase with a mortgage. Consequently, this meant that households were taking larger mortgages than previously to fund housing purchases, which also increased the loan volume more rapidly.

However, in 2010, Finansinspektionen issued a general guideline that new mortgages should not exceed 85 per cent of the market value of the housing concerned, the loan-to-value limit or so-called mortgage cap. After the limit was introduced, the average loan-to-value ratio for new loans gradually fell and debt growth subsided from 10 per cent per year in 2000–2010 to slightly over 5 per cent per year in 2011–2014.

The banks abolished secondary mortgages but are able to approve unsecured loans even after introduction of the mortgage cap

Another change on the mortgage market was that the banks, led by state-owned SBAB, abolished secondary mortgages in 2005. All in all, this led to a reduction in households' mortgage costs and meant that they could afford to take larger mortgages.

Pre-2005, mortgages were split up into first and secondary loans which together normally totalled 85 per cent of the value of the home. The mortgage borrower funded the rest with a cash down-payment or an unsecured loan. The first mortgage had greater collateral in the home and was therefore associated with a lower credit risk for the banks. This led in turn to lower first mortgage interest rates. In addition, the first mortgage was often interest-only, at least to start with. Regarding the secondary mortgage, which had much less collateral in the home, the borrower paid a higher rate of interest at the same time as the loan had to be paid off, often within a period of 10-15 years. When the secondary mortgage was abolished, households' interest and loan repayment costs fell as the entire loan was now treated as a first mortgage. In SBAB's case, the first mortgage amounted to 95 per cent of the value of the home after they had abolished the secondary mortgage. As a result, the size of the cash down-payment also decreased in relation to the value of the home.

Since Finansinspektionen introduced the mortgage cap, first mortgages have been limited to a maximum of 85 per cent of the home's value. It is not unusual for the banks to approve unsecured loans in addition to the first mortgage. According to Finansinspektionen (2015a), 8 per cent of randomly sampled households had taken out unsecured loans to part-fund their housing purchase. Of these new loans, however, unsecured loans made up less than 1 per cent.

Compared to first mortgages, unsecured loans often have a higher rate of interest and often have to be amortised.

Loan conditions for tenant-owned housing and single-family houses put on an equal footing

Up until the beginning of the 2000s, it was common for the banks to offer different loan conditions for single-family houses and tenant-owned housing. It was mainly a question of a lower loan-to-value ratio for first mortgages and higher interest rates for tenant-owned housing. Traditionally, the interest rate was about half a percent higher for tenant-owned housing mortgages than for single-family house mortgages. The banks justified the difference by stating that single-family houses represented stronger collateral, as they were classed as real property.⁶³ SBAB was however first to lower the mortgage rate for tenant-owned housing and second homes, and brought it into line with mortgages that had single-family houses as collateral. They argued that the risk was more a matter of whether the customers could pay back the loan rather than the value of the collateral. Their argument also reflects the change that was afoot as a result of the Second Basel Accord (Basel II), in which exposures to tenant-owned housing were put on an equal footing with single-family houses.⁶⁴

The banks began offering interest-only mortgages

There are no data showing how households' loan repayment habits have changed over a longer time period. But prior to the turn of the millennium, it was probably more common for the banks to require borrowers to make repayments on their mortgages.⁶⁵ However, competition for mortgage customers heated up in the 2000s and the banks began to offer more and more interest-only mortgages. Since interest-only loans increase the scope of interest payments, households were able to take on larger loans. At the same time, a lower repayment rate means that the debt decreases much more slowly and households pay more total interest during the loan's entire maturity period.

Even though the data must be interpreted with considerable caution, Finansinspektionen (2013) showed that the percentage of interest-only first mortgages in the existing mortgage stock increased between 2007 and 2012, but that the percentage of interest-only new first mortgages decreased slightly during the same period.⁶⁶ At the same time, the percentage of interest-only secondary mortgages fell for both new and existing loans. The samples also

⁶³ See Sveriges BostadsrättsCentrum (Swedish Centre of Cooperative Housing) (2003).

⁶⁴ As a result of the Capital Adequacy Directive of 2007, the risk-weights of 100 per cent for tenant-owned housing and 50 per cent for single-family houses were to change to 35 per cent for both in accordance with the standard method.

⁶⁵ See for example Ragnegård (2011).

⁶⁶ One difficulty when interpreting this information is that it refers to loan components and not households, and households who have both first and secondary mortgages normally choose to repay the secondary mortgage first

showed that, to a certain extent, households made repayments in accordance with the terms of loan agreements. Finansinspektionen (2015a) has however shown that mortgage repayment behaviour has intensified in recent years, even though there are still many households with relatively high loan-to-value ratios who do not make repayments.

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Appendix – List of relevant Swedish authorities

Arbetsförmedlingen (Swedish Public Employment Service)

www.arbetsformedlingen.se

Boverket (the National Board of Housing, Building and Planning)

www.boverket.se

Fastighetsägarna (Swedish Property Federation)

www.fastighetsagarna.se

Finansdepartementet (Ministry of Finance)

www.government.se/government-of-sweden/finance

Finansiella stabilitetsrådet (Financial Stability Council)

www.sou.gov.se/finansiella-stabilitetsradet/

Finansinspektionen (the Swedish financial supervisory authority)

www.fi.se

Hyresgästföreningen (The Swedish Union of Tenants)

www.hyresgastforeningen.se/Sidor/default.aspx

Institutet för bostads- och urbanforskning (IBF) (Institute for Housing and Urban Research)

www.ibf.uu.se

Konjunkturinstitutet (National Institute of Economic Research)

www.konj.se

Konkurrensverket (Swedish Competition Authority)

www.konkurrensverket.se

Nationella lägenhetsregistret (National Apartment Register)

www.lantmateriet.se/Fastigheter/Fastighetsinformation/Lagenhetsregistret/

Riksgälden (Swedish National Debt Office)

www.riksgalden.se

SCB (Statistics Sweden)

www.scb.se

Socialdepartementet (Ministry of Health and Social Affairs)

www.government.se/government-of-sweden/ministry-of-health-and-social-affairs

Socialstyrelsen (National Board of Health and Welfare)

www.socialstyrelsen.se/

Stockholms Handelskammare (Stockholm Chamber of Commerce)

www.chamber.se

Sveriges BostadsrättsCentrum (Swedish Centre of Cooperative Housing)

www.sbc.se

Sveriges Byggindustrier (Swedish Construction Federation)

www.sverigesbyggindustrier.se

Sveriges Riksbank (The Riksbank)

www.riksbank.se